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President's Address

THE PROFESSION AND THE PUBLIC

BY

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In the first place I wish to thank you for the honour you have done me in electing me President of the B.M.A. Specially I wish to thank my colleagues in the Division who by nominating me have given me a token of friendship that I prize above most things. I consider this honour one of the greatest within the profession, and my sense of inadequacy is at its height at this moment when I am faced with the problem of delivering an address that will be worthy of the head of this great Association. Previous holders of my office have often been pre-eminent in one or other branch of medical science and they have made this address the vehicle of some valuable addition to or survey of medical knowledge. I can claim no such pre-eminence. For forty years I have been in practice both as a general family doctor and as a consulting physician. They have been eventful years in the development of medicine as a public service, using this expression in its widest sense. One might almost say that they cover the evolution of our work from a purely private affair between individuals to one of the vital public services of the community.

An Age of Planning

It is some aspects of this evolutionary process that I have chosen to form the subject of my address and to consider once again the relationship between us doctors and the public, for it is by those we cure, and even more by those we do not cure (so long as they are not dead), that we are ultimately judged. It was Mr. Bernard Shaw who proclaimed from the mouth of one of his characters that the medical profession was not a "profession" but a "conspiracy," though he hastened to add that all professions were a conspiracy against the laity.

This is rightly said to be an age of youth, but I still think that there is a lot of truth in the old Latin tag, "Experientia docet." I think that I can lay claim to that experience—experience, moreover, as a working member of the rank and file of the profession. The rank and file from their very nature are singularly "unvocal." For that reason if for no other I welcome the opportunity that your action in making me your President has given one of them to speak publicly on their behalf. I have said that this is an age of youth. It is also an age of planning. *Laisser-faire,* that principle beloved of our fathers, has done great things but it has outlived its time. All the signs and symptoms point to the fact that, whether we wish it or not, in every field of human activity some form of control, of planning, is necessarily coming. We may not like the thought, but it is useless to kick against the pricks, and it rests largely with us what form that control is going to take.

Medicine as an Industry

I want you to look for a moment on medicine as a great industry: an industry whose product is the health, both physical and mental, of the community which it serves. I have a moment's hesitation in using this simile, as the word "industry" has come to have a meaning that throws the emphasis on the indirect product—money—rather than on the direct product of the labour involved. This emphasis is, and I hope always will be, foreign to our own work. As I see it this industry is one which is provided with a plant that is excellent, efficient, and up to date in practically every way. I do not think, however, that the best use is made of this plant. It has grown up haphazardly and piecemeal. There is great want of correlation, great duplication of effort.

General Practice

First look at what we may call the selling end of the industry. If you want to buy some unusual article you go to a retail shop and make use of their experience with wholesalers and the like to get what you want from the most appropriate source. Some such arrangement is necessary in medicine, and as things are at present this arrangement is not working smoothly. The fault is perhaps largely an administrative one, but I believe clear thinking on the exact nature and function of the medical practitioner is also lacking. The matter of health and its maintenance is so essentially a personal thing that the personnel of this (retail) division of our health industry must have a close personal relationship with the public as individuals. This relationship is only possible in a family doctor, either in his present form or in some altered, but essentially similar, form. At present there is a tendency for this branch of the profession to sink

lower and lower in the estimation both of the public and of the student body from which the profession itself is recruited.

The practice of medicine itself has been brought into disrepute by the indiscriminate administration of medicines. The faith of the public in a bottle of medicine is pathetic. I grant it may be used on account of the psychological effect, but often it is quite unnecessary and is only prescribed because the public expect and insist on it. On the other hand, there is even a section of the public which considers that the training, knowledge, and ability of even the best doctors in the land ought not to be used in helping the sick; that in fact their talents should be hidden in a napkin and reliance placed solely on prayer, and not to do what I believe the Almighty wishes and expects us to do ourselves. The principle which I have learned to follow is to avoid drugs if possible, but when necessary to give them in adequate doses—often in much bigger doses than those suggested in the textbooks—until a definite effect is produced. I possess a very interesting work on *The Practice of Physick* written by Dr. Willan 257 years ago, in which the author recommended all physicians to follow what he invariably did and take a dose himself of every medicine he prescribed for others. I imagine this is hardly practicable in these days—especially in the case of panel practitioners in the midst of an influenza epidemic!

A Family Doctor Service

The credit of the general practitioner I have said is sinking. A reaction from this attitude is inevitable. The more the public is educated and the more the health services extend and intrude into the lives of the people the more will there be required an active and an intelligent family doctor service. It will be no corps of clerks. It will require a wide professional training to ensure the early recognition of diseased states and the proper co-ordination of the specialist services, becoming daily more abundant.

A good general education will be essential, also personality and mental agility, so as effectively to inspire confidence and assist in the education of a public which is rapidly becoming more enlightened. Again, it is in this sphere that the Cinderella of the medical sciences, medical psychology, may well come into its own. The amount of minor and major functional nervous diseases in the community is admittedly very large. The earlier they are recognized and treated the more hopeful is the outlook, and owing to the lack of any obvious disability, except in the later stages, it is only the general practitioner who can lead the attack. His position as trusted counsellor and family friend lends itself admirably to the purpose, and it is true even now that all general practitioners are, to a greater or lesser extent, psychotherapists. They would be much more effectively so if their training included some instructions in the principles of medical psychology. This family doctor is the obvious connecting link for our medical industry. All direct contact with the public as individuals should be in the first instance through the family doctor. There should be no short-circuiting or duplication of his services.

Specialism

At the back of this family doctor service there must be a specialist service. Medicine has grown so enormously that it is quite impossible for any one person to be proficient in every branch. The specialist is concerned more with one branch of disease, but in these days of specialism when the tendency is to dissever the various organs of the body it is wise to bear in mind the truth of the ancient saying, "If one member suffers all the members suffer with it." That great surgeon the late Lord Moynihan is reported to have said that he liked to consider himself a physician who had sometimes to employ surgery to cure some of his cases. There is, moreover, a lot of mistakenly loose thinking on the subject of specialism. The family doctor when all is said and done is also a specialist—a specialist in the recognition of disease in its early stages and in the helping of his fellow men in the many little ills and troubles that beset them; and these may be important, for a serious breakdown in health in later life may have its origin in trifling and unrecognized ailments of twenty to thirty years before. To take a case in point. The intensive research into the origin and development of cancer points to the probability that malignant growths rarely develop suddenly, but there is a precancerous stage usually lasting for years in which cancer has developed from minor ailments which might often have been rectified if their significance and possible danger were recognized.

I would like to see more attention paid to the treatment of the so-called "minor ailments." It has been estimated that 40 per cent. of all sickness is due to the patient's own action. If this be true (and from my own personal experience I have found it so) think what a vast amount of sickness and ill-health might be avoided; but this requires a willingness on the part of the patient to talk over his minor ailments with his doctor instead of going in for self-medication assisted by the chemist. Remember it is the general practitioner who sees the beginning of disease; the specialist mainly the end. There is no real reason why one branch should be from its nature more eminent than the other. They are essentially complementary, and each requires for its proper performance attainments of the highest order.

Now in order to get material for practising his art and facilities wherewith to treat them the consultant specialist is inevitably associated with a hospital. With the entry of the local authorities into the hospital field things are in a state of chaos in many areas. There are strong points in both voluntary and municipal systems and each can learn from the other. The one thing that is absolutely essential is the will for exponents of both sides to get together and work out for their own particular areas a scheme that will ensure this co-operation of both systems, taking the best points of each and not allowing one to swallow the other. It is this will "to get together" that is all too often lacking.

Public Health and Co-operation

Apart from the curative specialist services there is another specialist service which is necessary to the modern community—the medical officer of health service, or the specialist in social and legislative medicine. While the knowledge necessary for this branch is in many ways different from that necessary for the successful practice of individual Medicine, it is dependent on and very closely related to that branch. This correlation as things are at present is often extremely deficient, and for any smooth working of the medical services in a community more effective measures of amalgamation must be applied between the two branches. I believe that this can be supplied by the provision in each administrative locality of a Medical Advisory Board consisting of representatives of each branch of the medical services—administrative, specialist, and general practitioner. Even now in a small

way there are regulations which permit of some such council, and in the few neighbourhoods in which it has been tried it has been an unqualified success.

Financial Consideration

I have already said that the main emphasis in this industry of ours is rather on the results in the nature of the better health that it brings to its members. The real reward to the good doctor must always be the knowledge of having served the cause of humanity. Do we not all know how often the cases that give us most satisfaction are those that bring us least money?

The B.M.A. is an Empire-wide association of doctors for the advancement and dissemination of knowledge and the maintenance of a high standard of honour in the profession, and secondarily for a just and fair remuneration from Government and public bodies. This is where the difference is found between the medical profession and a trade. In the former the primary motive should be to help the public, with profit as a subsidiary factor. There are few indeed who could practise so time- and soul-consuming a work on a purely honorary basis. The vast majority of us must depend on our work for the expenses of living and the upbringing of our families.

I do not think I am wrong in saying that the whole subject of our remuneration is one that is more and more preoccupying members of every branch of the profession. The correspondence columns of our journals and the agenda papers of our Divisions, Branches, and Committees will bear me out. I do not presume to offer a solution for problems the complexity of which has taxed the brains of multitudes much more financially experienced than myself. There are, however, one or two principles which are to my mind fundamental.

Free Choice, and Other Principles

The first point, which is at the same time the least controversial, is what is known as the principle of "free choice" of doctor. You may say that this is hardly a question of remuneration. That is true, but indirectly it is of enormous importance because its acceptance makes extremely difficult the provision of any sort of salaried family doctor service. This I believe must be remunerated on a capitation basis as under the present National Health Insurance system. We as an Association have just prepared a revised version of our proposals for a General Medical Service for the Nation, in which the two vital principles of free choice of doctor and of payment on an insurance basis are reaffirmed and their wide extension advocated.

The first great extension we propose is the inclusion in the system of all members of all families within an income limit of £250 a year. We are seeking to double—no less—the number of individuals who receive medical service through N.H.I. The second extension we propose is that the service given should be medically complete—that is to say, that it should include all forms of specialist, consultant, and auxiliary service as well as that provided by the general practitioner. I should not like to say which of these changes can do most for the public health.

Such is our official policy, far-reaching in scope and well suited to secure the full co-ordination of each and all of the country's health services. Our proposals would bring three-quarters of the community within an official system of medical service. Illness is not a steady event from season to season or from year to year, and for this reason it lends itself particularly to treatment on an insurance basis. Both patient and doctor must surely prefer regular to irregular outgoings and incomings.

Within the last six months the Association has been instrumental in forming a National Federation of Provident Associations, which extends the insurance method up to a maximum income of £500 according to the number of individuals in the family, or to a maximum of £550 in the case of London, also taking into account the family income. I suggest to you that the principle adopted is one which, in the future, may well be much more widely applied. It is, of course, the amount of the premium that is the difficulty. No man enters the profession of medicine with the idea of making a fortune. Equally no man can possibly fulfil the responsible and difficult role for which the family doctor of the future is surely cast without the possibility of sufficient remuneration not only to provide the necessities of life but also the cultural and social activities on which his full usefulness so much depend. Any capitation payment must provide this minimum, and provide it on a basis of a number of patients per doctor which is not too large to prevent his giving the necessary time to each. This time is becoming increasingly more as our knowledge of therapeutic and diagnostic methods increases.

Fees for Consultative Work

The remuneration of the consultative branches is subject to rather different conditions. Present consultative fees are high relative to those in the other branches. The reason for this is that the consultant has a relatively short earning period. He has to serve a long and practically unpaid apprenticeship. It is hard to justify this. I would prefer a system where the status of consultant depended on hospital and clinic appointments carrying a reasonable salary which would vary with their responsibility. Were this so the payments for outside consultative work could be considerably lowered and would allow the young consultant, while always assured of a livelihood, to look forward to an improvement in his circumstances as his repute grew. These salaries would come from the funds of the hospitals, whether these were supported by the State or by "voluntary" contributory schemes. The days when the hospitals could be regarded as pure charities are gone. Very few hospital patients could not afford to join some sort of contributory scheme.

Publicity and Education

Let us return a moment to our simile. Every industry, apart from its productive side, always has in addition a public relations or publicity side. Hitherto it has always been a keystone of medical policy that publicity or advertising is in direct antithesis to the best interests of the profession and of the public alike. The truth of this in regard to advertising by individuals is, I think, still undisputed. I think, however, that some form of group advertising by the profession as a whole is seriously overdue. In fact, this publicity side of our industry, hitherto neglected, could be developed to the benefit both of the industry itself and of the public which it serves. Consider a moment this public. Taken as individuals and in times of sickness and stress, we all know that there can be nothing quite so touching as the almost blind trust which they repose in the science of medicine and in the particular practitioners that happen to be giving them the benefits of that science. This is true of the public as sick individuals, but the public taken in the mass and in health does not trust either medicine or the medical profession. Their attitude is an extraordinary blend of ignorance and

superstition, in which they have unbounded confidence. Everybody thinks he knows all about medicine, without training or instruction. Test it by telling a group of friends that you have a pain in your hip and at once you have it diagnosed and half a dozen different suggestions of treatment given, all of them "infallible," from carrying a potato in the pocket to wearing a ring of elephant's hair. Next day tell the same friends that you have trouble with your neighbour, whose apple tree has blown down across your wall, and as he will not remove it you propose to do so yourself. These same friends will at once advise you to do nothing rash, but to consult your lawyer first. Thus they think they know medicine, but are not ashamed to admit a complete ignorance of the law.

The public want the ailment or disease to be definitely named, and then ask why they cannot be cured by such-and-such a treatment which did so much good to their friends. "What is good for one is good for another," they say. This is where the greatest mistake is made—no two people are exactly the same. There is much truth in the old saying, "One man's meat is another man's poison." I remember the case of a man who took five grains of aspirin (a very common and useful remedy), but in this case it was followed in half an hour by acute swelling of the face, tongue, and throat, and he was in great danger of suffocation until relieved by the appropriate remedy.

Countering Credulity

What opportunity is there at present for the public to outgrow this ignorance and superstition? In the long run I suggest that education of the people must be the basis of any effective remedy. I think that this theme of public education in health is particularly apt at the moment. The health of the nation is very much in the public eye, and unless we guide the enormous enthusiasm that lies behind this campaign there is a real danger that it may do more harm than good. I think we should go further than that. I think that teaching in elementary biology, anatomy, and physiology should be an essential and important part of all education, however elementary. Surely, it is up to us and to no one else to see that it is included in the curricula of our schools? Similarly, courses of popular lectures could be arranged, if not officially, possibly by Branches and Divisions of our own Association. I have very little doubt that were they provided there would be no difficulty in finding audiences for them.

Secondly, I would suggest that there is a great opportunity awaiting both the Press and the B.B.C. to do more in the educational field. Members of the medical profession could do much to help them in that task. Surely it should be up to us to see that a supply of well-informed and informing articles is available to whatever papers wish to use them, and equally that the B.B.C. should be given all possible help in the provision of talks which would satisfy these two same conditions? Yet, I do not think that we must expect too much. We have to remember that both the Press and the B.B.C. are limited by the educational attainments of those they serve. They can help and to some extent anticipate improved education on these matters in the schools. They cannot, I am afraid, take its place. That is why I have given first place to education in what I have said.

Thirdly, I feel sure that it is only through education of the public that the public credulity in regard to advertised remedies can be removed. You all know what I mean when I speak of the evil of patent medicines. There are good proprietary medicines as well as bad. Some we make use of ourselves, others we could on no account condone or recommend. What matters is that because of the superstitious ignorance of the public there has grown up an enormous mass of advertisement literature for remedies that are famed to cure not only every disease known to the profession, but also many diseases invented purely for the sake of being cured by some particular remedy. It may be true that many of these remedies are in themselves quite harmless or even beneficial when properly used. That is not the point. The advertisement is designed to create a demand, and the demand can only lie in ill-health, imagined or real, or (more insidiously) by the suggestion that a certain product is necessary for the maintenance of health. These advertisers know their job. Their writings are carefully couched in pseudo-scientific terms, and we see daily in our practices how enormously receptive and almost universal is their audience. It may be unreasonable to criticize unduly those who for their own profit play the tune which the public wants. As I have said, by no means all of these advertised remedies are intrinsically undesirable. It must be in the interests of the reputable manufacturers that the demand for their products should be based on sound knowledge and not on ignorance and fear. For the rest, the trade as it is now conducted could only flourish in a public which knows little or nothing of the true principles of health and healing. The schools can educate the public and we as a profession can tell the public. The more the public trusts us the more we are able to help and the sooner they will believe that we are truly endeavouring to protect them against themselves. It is by measures such as these, and not by restrictive legislation, that the true cure of the evils which I have mentioned will come.

Medicine in the World of Science

I believe further that there is another sphere of education in which our entry might be of incalculable value. I like to believe, and in doing so I do not think I am entirely governed by prejudice, that the scientific world as a whole is to a large extent free from most of the jealousies which poison the interrelation of humanity in the world to-day. Scientists as a body approach nearer to the ideal world community than any other large division of mankind. Who has ever heard of class warfare between workers in any field of science or of an embargo on the exchange of knowledge, whether intra- or international? Even when something of the latter kind has been imposed from some political sphere it has been met with prolonged and emphatic protests from the entire scientific world. The medical profession forms one of the most important divisions, both numerically and influentially, of the world of science. The profession as a whole is really working for the common good of the community and not with the idea of screwing the last penny out of them. It is a true brotherhood, and in ordinary practice the individual doctors continually assist one another and pool their knowledge and advice to an extent quite unknown to the patient and the public at large; but it is also unique in that world because of its close relationship with the lives of the non-scientific laity. Are we not, then, in an ideal position to bring the ways of life and thought of one world to the benefit of the other?

I do not presume to dictate a programme, but I humbly suggest that there are possibilities in the idea that at least merit our consideration, both as individuals and as an organized profession. I would like to suggest that as members of this great profession we have possibly an important missionary function in this cause.

TREATMENT OF CARCINOMA IN THE PHARYNX AND LARYNX AND ITS RESULTS*

BY

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The introduction of irradiation has rendered the problem of treatment in various situations infinitely more complicated, because the results of its use are neither so good that the method can claim to supplant simple surgical treatment altogether nor so bad that they can be dismissed as negligible. In certain situations other than the pharynx and larynx the matter is much simpler; for example, in the floor of the mouth irradiation has taken the place of surgery almost entirely, whilst in the stomach the abdominal surgeon does not need to concern himself with it. Unfortunately, it is also true that in many situations, such as the oesophagus, where the results of surgery are bad, those of irradiation also are poor, and, conversely, many of the best results obtained by irradiation are in situations where the tumour is most amenable to surgery. This applies to the larynx and pharynx. If surgical treatment is chosen, then an operation suited to the site and extent of the tumour must be designed; if irradiation is chosen, then the type of radiation and the method of its application must be settled.

It is proposed to deal first with tumours in the oropharynx—that is, tumours of the tonsil and fauces—and then to deal rather more fully with the lower pharynx—that is, the laryngopharynx and the larynx itself. My own endeavour will be chiefly to indicate what can be expected from surgery, and I will leave it to others to show the best that can be obtained by irradiation. A great variety of tumours may be encountered in the situations under consideration, but I think that this discussion will have more value if it is limited to epithelioma, which is the common form of malignant tumour.

In the oropharynx, epithelioma usually begins either on the lower part of the anterior pillar or in the angle between the lower pole of the tonsil and the side of the tongue, and is usually seen spreading over the tonsil and fauces and into the side of the tongue. There may or may not be a palpable gland in the neck; often there is not, but if the cervical glands are enlarged the size is often in inverse proportion to that of the primary growth.

Where the growth is comparatively early without fixation and there are no palpably enlarged glands in the neck, the tumour may be removed by diathermy, as Norman Patterson has long advocated. Such cases must be kept under observation lest enlarged glands appear in the neck. If a gland dissection has to be combined with removal of the primary tumour it should precede the diathermy operation by ten or fourteen days to avoid difficulties from the changes which diathermy produces in the neck. Patterson records that out of fifty patients treated by diathermy nine died and thirteen survived for more than three years.

In more advanced infiltrating growths, where the tongue is more invaded or the growth has become adherent to the inner surface of the mandible, diathermy is not applicable alone, and the operation required includes removal of the mandible from the canine fossa to the condyle. This is naturally a mutilating operation and must be followed by a careful reconstruction. Dickie records that in thirty cases so treated there were seven deaths and fifteen recurrences in less than five years, but eight patients survived for more than five years and one for over eleven years. Radiation employed in such cases may take the form either of radium applied at a distance or of the implantation of radon seeds.

The treatment by irradiation is most attractive, because when successful the pharynx is almost normal in appearance, but the question remains whether in treating epithelioma it gives a sufficiently high proportion of lasting good results to displace surgery. Biopsy must take an important place in making this decision, because sarcoma and Group IV epithelioma, which in its clinical course may be said to have more affinity to sarcoma than to keratinized epithelioma, give uniformly bad results with surgery and are radiosensitive.

In the lower pharynx the growths to be considered are those on the lateral wall of the pharynx, the epiglottis, the aryepiglottic folds, the fossa pyriformis, and the post-cricoid area. Of these various types the growths on the lateral wall of the pharynx, the epiglottis, the aryepiglottic fold, and in the post-cricoid area may be treated by lateral pharyngotomy combined with a subsequent plastic operation if in an early stage. For these tumours in a more advanced stage and for tumours of the fossa pyriformis almost always operation must be a pharyngolaryngectomy. That operation includes clearance of the glands on at least one side of the neck, and removal of the whole larynx and either a portion or a complete segment of the pharynx. A somewhat elaborate plastic operation is required later to reconstruct the pharynx, the patient being left with a laryngectomy.

The classification of cases in these groups into those suitable for lateral pharyngotomy or for pharyngolaryngectomy and those which are inoperable must be decided by clinical experience, which takes into account the extent of the primary growth, the invasion and degree of fixation of lymphatic glands, and the general condition of the patient.

Gluck and Soerensen record fifty-eight operations by subhyoid pharyngotomy, but this method is applicable only to carcinoma of the epiglottis. In 334 cases of extrinsic cancer treated by laryngectomy combined with resection of the pharynx with seventy-seven deaths, they obtained a permanently good result in 10 per cent. In Gluck's clinic, patients whenever possible were submitted to operation, so that no attempt was made to make the statistics appear favourable by selection of cases. Of my own patients treated by pharyngotomy or pharyngolaryngectomy between 1920 and the beginning of 1935 the following are some particulars:

TABLE I

	No.	Died	Recurrence	Remain Well
Pharyngotomy: Private patients	13	0	7	6
Hospital „	26	9	10	7
Total	39	9	17	13
Pharyngolaryngectomy: Private patients	7	1	4	2
Hospital „	9	2	3	4
Total	16	3	7	6

* Read in opening a discussion in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Plymouth, 1938.

Of these cases five of pharyngotomy and two of pharyngolaryngectomy have remained well for more than eight years. That is, out of fifty-five operations nineteen were successful, or 29 per cent. Against this must be taken into account that some cases have to be rejected as inoperable and that some of the operations are of a mutilating character; but, again, the operation has succeeded in some cases after the failure of radiation.

On the other hand, at any rate until recent years, the results obtained by treatment with *x* rays or radium in this class of lower pharyngeal or extrinsic laryngeal tumour were almost negligible and the condition of many patients was aggravated. It is in this class of case, in which the operations are particularly difficult and require ceaseless care and patience in the subsequent management, that an alternative treatment by *x* rays or radium would be welcome if a reasonable percentage of successful results can be obtained.

In the group of intrinsic cancers of the larynx, including tumours of the vocal cords—a few being on the ventricular bands or having origin in the ventricle, and some being of subglottic origin—the operative treatment is either by laryngo-fissure (with which partial laryngectomy may be included) or by total laryngectomy. The position and extent of the growth here again determine whether simple removal of a vocal cord on one side is done, or whether the front of the larynx or the whole larynx has to be removed.

Gluck and Soerensen record, for intrinsic cancer, 141 cases of laryngo-fissure with nine deaths from the operation and ten recurrences, 122 patients remaining well for at least three years. They also record 501 cases of total laryngectomy for intrinsic cancer. This number includes a series of 100 with two deaths, and in the last 181 cases there were twelve deaths from the operation. During the last ten years there were 30 per cent. of lasting good results.

The following are particulars of operations on my own cases of intrinsic cancer.

TABLE II

	No.	Died	Recurrence or Untraced	Remain Well
Laryngo-fissure or partial laryngectomy:				
Private patients	16	1	1	14
Hospital „	7	1	2	4
Total	23	2	3	18
Total laryngectomy:				
Private patients	42	2	9	31
Hospital „	33	12	7	14
Total	75	14	16	45

Of these cases nine of laryngo-fissure and eighteen of laryngectomy have remained well for more than eight years, including three for more than fifteen years.

In this group, out of ninety-eight operations seventy-three were successful—that is, 74 per cent. Here, again, some of the operations are of a mutilating character, but in early cases where only a vocal cord is removed the voice is often normal and much better than after treatment by radium. This group also includes patients in whom the cartilages had been attacked by growth or in whom perichondritis had supervened, rendering them unsuitable for treatment by radiation.

It is in this group that irradiation has had most success, and therefore that line of treatment is the most attractive, but it has to be shown that it can produce a large percentage of good results. I suggest that if radiation be employed it should be in the form of the radium beam, and that needles should no longer be used.

The figures for the operations have been given separately for the private and hospital patients because, although the numbers of each are approximately equal, the results in private practice are very much superior owing to the better condition, both general and dental, of the patients, the segregation of the patients in private rooms, the avoidance of changes in nursing staff, and the constant personal supervision of the surgeon.

In introducing this discussion I wish to avoid undue emphasis upon any particular method of treatment. This is particularly dangerous in discussing malignant disease, because in practice individual cases have to be considered, and, whatever the treatment, the prognosis of any one case is always doubtful, however favourable it may appear on the one hand or unfavourable, short of being quite hopeless, on the other. There is therefore, when failure ensues, often a feeling of regret that different treatment was not instituted, especially when irradiation fails to cure an operable case. Operation, too, might have failed, and I am concerned only to bring forward some points in the hope that the ensuing discussion may help to clarify the position.

I have to thank Mr. Arthur Pereira, registrar at St. George's Hospital, for his help in following up the fate of the patients and in preparing the statistical tables.

THE DIAGNOSIS OF UNDESCENDED TESTICLE

BY

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There are few conditions upon which more contradictory diagnosis and advice can be obtained from the medical profession than those which fall into the vague and elastic category of "undescended testicle." I know a parent who was told that her son's testicles:

(*a*) Needed immediate operation if he were not to be practically a eunuch. (A surgeon of great experience.)

(*b*) Should be left for five years to see what happened. (Another reputable surgeon.)

(*c*) Should be treated by hormone injections. (A physician.)

(*d*) Should on no account be operated upon, as the operation invariably failed. (The family general practitioner.)

(*e*) Were normal. (Myself.)

(*f*) Were held up owing to a displaced vertebra. (An osteopath.)

It is hardly necessary to say that the last diagnosis and the treatment that followed are now held responsible for the present obviously satisfactory condition of affairs. Admittedly this is an extreme case, but others like it are only too common.

When I first began to see numbers of these cases I was continually in doubt as to what advice to give, but latterly they appear to me to belong to certain well-defined groups. It may be of interest to put forward my present classification: I am far from thinking it a final one, but it is certainly much better than anything I had to start with. One of my difficulties was that the testicle in almost all its varied positions is extremely mobile, so

that it can only be properly charted as somewhere on a range of movement between two points. I have tried describing the variations by the names of these points, but the result was so clumsy that I have been forced to coin names for them.

Misconceptions

Most of the confusion is due to three widely held misconceptions upon elementary points.

1. *The Failure to Recognize the Normal Variations in Positions of the Developing Testis.*—I believe that any position in childhood from which the testicle will invariably reach the scrotum should be classed as normal. The custom at present is to describe as undescended any testis that is not in the position which would be normal for an adult.

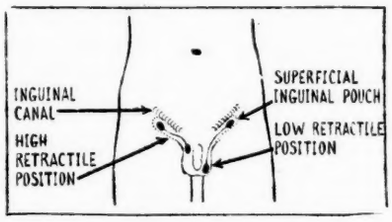

FIG. 1.—This is the diagram which I use for recording the positions of testicles. It shows by conventionalized signs the inguinal canal and the superficial inguinal pouch. The position of the testis is charted by a black oval at each end of its range of movement, connected by a fine line.

2. *The Idea that a Testicle which can be Felt in the Deep Tissues in the Region of the Inguinal Canal is Actually in that Canal.*—In the young child the testis frequently disappears upwards out of the scrotum. It is almost universally assumed that it goes into the inguinal canal. It does not. It runs into a space between the fascia of Scarpa and the external oblique muscle which is filled with the loosest of areolar tissue, and bounded quite definitely by the adherence of its anterior and posterior walls. It is about the same size and shape as the scrotal bag in which the testis should normally lie, and runs parallel to the inguinal canal, just to its outer side. I suggest as a name for it the "superficial inguinal pouch." It is just possible that this curious recess is the remains of a mechanism of rest and protection for the testis; something analogous to the seasonal withdrawal inside the abdomen seen in certain animals. This explanation would give a reason for that very peculiar structure, the fascia of Scarpa.

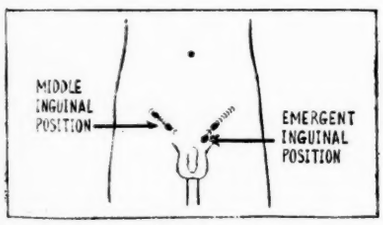

FIG. 2.

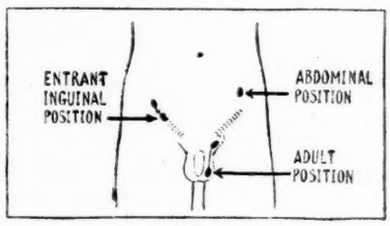

FIG. 3.

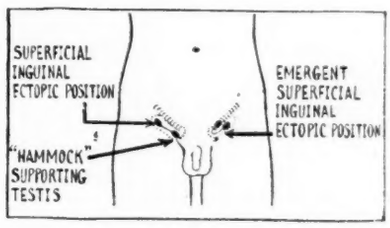

FIG. 4.

It is curious how little this range of movement of the testis is recognized. Thus, McAdam Eccles (1920) and Hamilton Bailey (1936), both acknowledged authorities on the subject, speak of the testis being withdrawn by the cremaster from the scrotum into the inguinal canal. A consideration of the maximum amount of shortening of muscle fibres will show that this is impossible: all the cremaster can do is pull up the testis over the pubis, whence it slips easily into the track. If this disproof is thought too geometrical, it is possible to try the direct experiment of endeavouring to thrust the testicle up into the intact canal during, for instance, a hernia operation. Eccles (1903), again, speaks of trying to push down a testicle that is in the inguinal canal by manipulations from outside.

If it seems impossible that such a misunderstanding should exist so long I can only point to the way in which surgeons have contentedly operated for generations upon a demonstrably very inaccurate classical account of the anatomy of the whole region involved (Browne, 1933).

A testis that is in the inguinal canal cannot be felt through the skin. It is a soft, elongated, wormlike object; sunk in the soft floor of the canal, shielded from touch by the tense tendon of the external oblique. In consequence I find it difficult to take very seriously those long lists of cases in which testicles, described as being before treatment in the inguinal canal, have descended into the scrotum as a result of pregnyl injections.

3. *The Classing of the Commonest Variety of Ectopic Testis as Undescended.*—This is that variety of ectopia well recognized by certain workers as the superficial inguinal. Barrington-Ward (1937) describes it clearly, and draws the important distinction between the results of operation upon these cases and upon true undescended testes. Unfortunately this distinction is by no means universal; in almost every series of illustrations of the operation for undescended testes this is the position which is shown as the original one, the gland standing out under the skin above the pubis in a characteristic way. I do not think that a testis large enough to be seen clearly through the skin is even permanently arrested in the true line of descent.

Variations in the Position of the Testicle

I believe it should be possible to classify the immense number of positions which the testicle may occupy in such a way as to give a valuable guide to prognosis and treatment. I am very conscious that the attempt which follows is open to criticisms, and I should welcome any that may be made. It follows the obvious lines of dividing the variations into three classes. First, the normal, in which, as I have said, I include those positions from which a testicle will invariably spontaneously descend to the bottom of the scrotum by the time that growth is complete. Secondly, the undescended positions, in which the testis has been arrested in its line of travel from kidney to scrotum at some point from which there will not be spontaneous descent. Thirdly, the ectopic, in which there is a turning aside from the direct line of descent.

1. NORMAL VARIATIONS

(A) *Adult.*—In this the testes range from the bottom to the neck of the scrotum according to the contraction of dartos and cremaster. Most testes are like this at

birth, and there is never any question of the correctness of their position.

(B) *Low Retractile.*—In this common variety the lower limit of the range of movement is the same as in the adult—the bottom of the scrotum. But the testis is so light and small, and the cremaster so active, that it is often pulled up over the bar of the pubic bone. Once over this it runs freely into the superficial inguinal pouch, and may stay there for days, though it can always be forced down with the fingers.

Diagnosis.—It is often diagnosed as "undescended testicle."

Treatment.—I have known these patients given injections of pregnyl with excellent results. I hope they are never operated upon. Needless to say they only need leaving alone.

(C) *High Retractile.*—In these the testis remains habitually running freely in the superficial inguinal pouch, and does not spontaneously descend thence during childhood. It can, however, be pushed down well below the external ring, over the pubic bone, and into the neck of the scrotum. This lower range of movement is the very important distinction between it and the superficial inguinal ectopic position.

Diagnosis.—It is almost invariably diagnosed as an "undescended testicle."

Treatment.—I believe that this class supplies the greater number of the successes of pregnyl treatment, which undoubtedly in many cases does enlarge the size of the gland and hurry its descent. A considerable number are operated upon, usually with good results.

In my experience in these cases descent invariably occurs spontaneously when the testicle begins to enlarge to the adult size and weight: I have never seen or heard of an adult testicle with this range of movement. Certain cases for which I advised operation, and which to my confusion developed normally without it, undoubtedly belonged to this category. They are also the justification of the policy of waiting to see what happens, and account for "undescended testis" being about three times as common in children as it is in adults.

2. UNDESCENDED POSITIONS

(A) *Emergent Inguinal.*—In this position the testicle can be felt popping in and out of the external ring, moving freely in the hernial sac that invariably exists, much as an ovary often behaves in an infant of the opposite sex. It should be noted that the testis only emerges or withdraws according to the mechanical forces acting upon it, such as increased abdominal pressure in one direction or the surgeon's finger in the other. It is never pulled in by a contraction of the cremaster, which is always very poorly developed in these cases.

Diagnosis.—This may be as difficult as that of a small inguinal hernia: the testis may be easy to feel one day and impossible the next. This is fortunately of no great importance, as the treatment is the same as that of the conditions with which this variety may be confused.

Prognosis.—I am not sure what would be the fate of a testis of this sort if left untouched till adult life, as I have never felt it justifiable to do so. If bowel descends into the hernial sac it would probably drag the testis down into the scrotum with it. Apart from this, as the enlargement of puberty caused the testis to become a tighter and tighter fit in the external ring, it would finally be shut out permanently, as the forces which drive it out are so much stronger than those which draw it in. Probably it would end up in the superficial inguinal pouch rather than make its way into the atrophic scrotum which is usually present in these cases. It is impossible to say that these testes never descend either spontaneously or after the administration of pregnyl, but I have never seen one do so.

Treatment.—In every case operation, at which the coexisting hernial sac is removed.

(B) *Middle Inguinal.*—These testicles run in a hernial sac from one end of the inguinal canal to the other. They are invariably badly developed, soft, and elongated to fit the space in which they lie. It is curious to see how they change into the normal compact rounded shape if they are successfully shifted into the scrotum.

Diagnosis.—The main point is that it is impossible to diagnose this position without operation, since, as has been said, it is impossible to feel a testis in the inguinal canal. Consequently till the canal is opened one cannot say whether the testis is in it, in the abdominal cavity, or is absent altogether.

Prognosis.—I believe that these testes never descend spontaneously or as a result of hormone treatment. Descent of bowel into the hernial sac would probably bring one down.

Treatment.—Operation in every case.

(C) *Entrant Inguinal.*—The testis varies in position between the upper end of the inguinal canal and the abdominal cavity. Its only important point of distinction from the preceding class is the greater difficulty of bringing it down at operation.

(D) *Abdominal.*—Here the main point of interest is whether, if one does not find a testicle in the inguinal canal, one is justified in opening the abdomen to search for it.

3. ECTOPIC POSITIONS

(A) *Superficial Inguinal.*—In this position the testis lies in the lower part of the superficial inguinal pouch, free to move up in it to an extent determined by the length of its cord. To arrive there it has turned sharply upwards and outwards on leaving the external ring, apparently because of an abnormal attachment of the fascia of Scarpa to the pubic bone. This means that instead of the inguinal pouch having an open lower end, the way from it into the scrotum is blocked by a strong fibrous hammock, in which the testis lies supported. As I have said, some surgeons recognize this common position as an ectopia, but many do not. Ombrédanne (1932) does not figure it in his diagram of the directions in which ectopia may occur, and McAdam Eccles shows several examples of it in his classic work as inguinal retention and not as ectopia. A point of interest is that if a large hernia develops in this position it will descend into the inguino-crural fold, not into the scrotum.

Diagnosis.—The most important single point in the diagnosis of testicular position is the distinction between this displacement and the high retractile testis. One needs operation and one does not. One responds to pregnyl and one does not. One develops normally if left alone and one does not.

Prognosis.—There is no possibility of spontaneous descent.

Treatment.—I have known vast amounts of pregnyl employed in attacks upon this variety, with no result whatever on the position. It is the one which accounts for the fact, still being confirmed, that cases of unilateral undescended testis average much poorer results with hormone treatment than bilateral ones. Incidentally I would have thought that if one testis had descended normally it might be assumed that, whatever was keeping up the other, it could not be lack of hormones. However, I have never had this objection taken seriously as a reason against giving a course. The only treatment is operation. It is easier than in a true undescended testicle, owing to the extra length of cord.

(B) *Emergent Superficial Inguinal Ectopic.*—The distinction between this and the emergent inguinal position is merely a fine shade of diagnosis. In everything else they are alike.

(C) *Other Ectopic Positions.*—The penile, femoral, perineal, and other well-recognized positions present no diffi-

culties in diagnosis. As a curiosity I may mention being called to operate upon what was diagnosed as an acute appendix. Actually it was a torsion of a testicle between the two oblique muscles over McBurney's point.

Summary

To recapitulate some of the points which have been put forward:

1. A testicle that is in the inguinal canal cannot be felt through the skin. Conversely, a testicle that can be felt is not in the inguinal canal.

2. The testis is never withdrawn into the inguinal canal by the cremaster.

3. When the testis ascends from the scrotum it runs into a somewhat similar pouch above, external to the abdominal muscles.

4. A testis that can be easily seen through the skin anywhere except in the scrotum is ectopic.

5. A testis that can be pushed down over the pubic bone will invariably descend spontaneously by the time full growth is reached.

6. Pregnyl treatment will not bring down any testis that would not have descended without it, though it will hurry the descent. Whether this acceleration is worth the risk of certain disquieting possibilities is a matter of opinion.

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MEASLES

THE CONDUCT OF A SCHOOL EPIDEMIC

BY

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What should be the course and outcome of an epidemic of measles in a school community? The answer to such a question must depend upon a number of considerations —clinical, seasonal, domestic, and economic—and yet each medical officer of a school community must have before him an ideal that it will be his endeavour to realize when faced with the inevitable and recurrent onslaught of measles in the community for which he is responsible.

Agreement is still incomplete upon the elementary data (Hobson, 1934), which may conveniently be stated as under:

1. Measles is due to a virus—as yet unidentified—and a *natural* attack of the disease is generally regarded as conferring a permanent immunity. Second and third attacks of the disease are well known to occur, but are so rare that they can safely be ignored within the age limits of school life. It is frequently stated and generally assumed that an attack of measles, *attenuated* by the administration of immune serum, confers an immunity as permanent as that which results from a natural attack. This reasonable assumption may prove to be well founded, but as yet it rests upon no solid body of clinical evidence.

2. Infection is by droplets from the nasopharyngeal excretions of infected individuals, and a patient may be infectious six days before the appearance of a rash (Hobson, 1934). The catarrhal discharges of the infected may also be the vectors of secondary virulent organisms to other susceptibles.

3. The incubation period is more than ten days, and in serum-treated cases may be twenty-one days. In serum-treated cases there may be no clinical evidence of infection before the explosive appearance of a rash on the twenty-first day (Hobson, 1934).

4. Quarantine should be observed for twenty-one days in all cases.

Measles vies with influenza and whooping-cough as the most infectious disease in a closed or semi-closed community such as a school, and the prospects of limiting the spread of the disease by early diagnosis and segregation of infected individuals are very small indeed. Koplik's spots appear too late and too inconstantly to be of any real value in early diagnosis, and may be recognizable only with the appearance of the rash in serum-treated cases.

The First Principle

If these data be accepted the first principle in conducting a school epidemic will be that the epidemic shall be allowed to take its course and that the susceptibles who succumb shall experience a natural attack of the disease in the maximum *security*, thereby acquiring a permanent immunity. This principle requires amplification:

1. *Susceptibles.*—In each school there will be a small number of "delicate susceptibles" for whom an attack of measles will entail an unusual risk, particularly in the case of those children who are liable to oto-rhinological or pulmonary diseases. For these cases, which should be selected by the school medical officer, serum prophylaxis is clearly indicated. For a few specially delicate susceptibles the dose should be one that will ensure *protection*—such children should then be removed from school to avoid further exposure to infection on a falling tide of passive immunity. For the majority of such "delicate susceptibles" the dose of serum (see later) should be so timed and adjusted as to secure *attenuation* of the attack, and these protected susceptibles should be allowed to continue with normal school routine. The routine use of convalescent serum for all susceptibles is not recommended until the time comes when serum therapy has a scientific posology, and it has been established that the immunity from an *attenuated* attack is as permanent as that which results from a natural attack of the disease. The deliberate postponement of an attack of the disease by *protecting* all susceptibles cannot be considered as wise, although special circumstances may justify such a practice (Hobson, 1934). Such special circumstances must be judged by the medical officer concerned, but a coincident epidemic due to *S. pyogenes* or *H. pertussis* might be mentioned as a circumstance such as would justify an attempt at *mass protection* or *mass attenuation*.

2. *Security.*—The complications of measles present the real danger to health and life, such complications arising from secondary infection by pyogenic cocci, particularly from *S. pyogenes*. Complications may derive from an intrinsic or extrinsic source of infection; they come far more frequently from the latter. *Complications are most usually secondary infectious diseases* arising from cross-infection by neighbours, nurses, or doctors (Okell and Elliott, 1936; Keevil and Camps, 1937). Security from cross-infection can be attained only by strictly observing the established rules of environmental hygiene and nursing, which are familiar to the profession in treating all highly infectious diseases. The measures so indicated can be briefly summarized under the headings of:

Bed Spacing.—A minimum of six feet should be preserved *between the edges of adjacent beds* in well-ventilated sick-rooms or, alternatively, effective barrier nursing. (Where cubicles are available no difficulty arises.)

Masking.—Nurses and doctors should invariably wear masks when in close contact with the patients.*

Sterilization.—All table-ware, cutlery, etc., used by the patients should be sterilized after each meal.

Personal linen, towels, etc., must be so supplied as to avoid common use or exchange, while paper handkerchiefs, which can be destroyed, should be employed for all nasopharyngeal discharges.

The fact that those who succumb are suffering from the *same disease* must never be used as an argument for the relaxation of any of these accepted rules.

The self-contained preparatory boarding school is an ideal community for epidemiological study, in that its inmates are usually housed in one building, have minimal opportunities for contact with the outer world, and have become "salted" to their indigenous flora. The school environment, "the stage" on which an epidemic may be set, is a fixture that must be adapted to the requirements of an epidemic, and in this process of adaptation and in the strict conduct of environmental hygiene in the sick-rooms the personal ingenuity and industry of the medical officer have full play (Dudley, 1926; Glover *et al.*, 1932). No step should be omitted to ensure that the child shall sustain the attack of an epidemic disease in conditions of safety comparable to the isolation of an independent sick-room in the family home.

The power of the responsible medical officer to order the conduct of an epidemic is, however, subject to those limitations which may be imposed by parental acceptance or refusal of a proposed course of action. Any course which involves the use of a therapeutic agent other than the traditional bottle of medicine, or entails a specific extra charge, is in practice referred for parental consent even when the action or dilatoriness of a few individuals may prejudice or frustrate a plan of action designed to safeguard the interests of a community as a whole.

In relation to any new prophylactic or therapeutic practice the measure of the average parent's knowledge is uncertain, and opinions may therefore be influenced by prejudice, ignorance, and anxiety. For these reasons a clear statement of the relevant facts should be sent to all parents without delay, with the usual notice of the appearance of the initial case, since the prophylactic administration of serum for protection or attenuation must be prompt if it is to be effective. The form of this statement is of some importance, and the following is suggested as likely to secure the co-operation of parents, although it will be obvious that no attempt has been made to distinguish between *protection* and *attenuation*— a distinction difficult to make intelligible to the layman and impossible to ensure in practice.

QUARANTINE NOTICE

"A case of measles developed on ....., and it must be anticipated that further cases will occur.

"By the injection of human serum (from persons who have themselves had measles) it is possible *temporarily* to protect an exposed susceptible individual from the disease with very reasonable prospects of success.

"The immunity conferred is only temporary, and the child becomes again susceptible to the disease in from six to twelve weeks' time; the duration of this temporary immunity is always a matter of doubt.

"This practice merely postpones an attack to a later age. The normal expectation is that one attack of measles confers a permanent immunity and will be well sustained by the vast majority of children.

"In view of the fact that reliable protective serum is only available in very limited quantities it is suggested that any child who may be considered delicate or for whom an attack of measles may entail some special risk shall be *protected* by an injection of serum.

"It is suggested that in the case of children who are in good health events should be allowed to take their normal course."

Signed.....

For "delicate susceptibles" a footnote is added:

"It is recommended that your child be given an injection of serum. It is impossible to ensure complete protection, but this treatment can be expected to mitigate the severity of an attack."

For specially selected "delicate susceptibles":

"It is recommended that your child be given an injection of serum at once, and taken home until the school is out of quarantine."

Serum Prophylaxis

Since Gunn (1928) introduced prophylactic serum therapy into this country there has accumulated a considerable body of evidence as to its value (L.C.C. Measles Epidemic 1931–2, 1933–4; Gunn, 1938). The use of serum prophylaxis calls for judgment and discretion, and it may be helpful to give a brief summary of the known facts.

Three preparations are available:

A. *Convalescent Serum.*—Obtained from individuals who have recently recovered from an attack of measles. There is at present no uniformity in the practice of collecting such serum. (In the Oxford service an arbitrary limit has been employed—namely, that such serum should be collected within one month of the rash of the donor.)

B. *Adult Serum.*—From adults who have experienced an attack of measles. (In Oxford an arbitrary limit of ten years from the attack of measles is observed.)

C. *Immune Globulin* (Lederle).—This is the pooled globulin obtained from human placentas.

It is well to recognize the comparative and common merits and defects of these three preparations, the powers and dosage of which are often stated with a precision which is not justified by the known facts. Until such time as it is possible to determine the antibody content of a given preparation the posology must be empirical. The practice of pooling will favour an approximation to a standard potency, and the efficiency of the three preparations is likely to be in the order given. The rate of deterioration of the antibody content of serum is unknown, and in this respect the immune globulin may have an advantageous quality. All three preparations, when administered in adequate dosage prior to the "critical day," can undoubtedly exercise a favourable influence upon the course of an attack of measles. It is probable that the "critical day"—that day of the incubation of the disease after which no protective therapy can influence its course—is the sixth day after exposure calculated from the first appearance of the rash of the infecting case (L.C.C. Measles Epidemic, 1931–2). By this time the disease may have been incubating in the susceptible individual for six to ten days.*

* The "Maskon" celluloid mask, supplied by Down Bros., is an efficient and convenient type.

* Gunn (1938) in a review of the clinical results of serum prophylaxis of measles in L.C.C. hospitals fails to make clear the basis of calculation in arriving at the *date of exposure*. As in the previous L.C.C. reports (1931–2, 1933–4) this point has never been clarified. The date of the appearance of the rash of the infecting case must in practice be the clinical event about which there can be no argument or doubt. A given case may have been infectious for one to five days before the appearance of the rash, and the *earliest* day of infectivity can rarely be determined on clinical evidence. The practice of serum prophylaxis will be less confused if the *date of exposure* is the date of the appearance of the rash of the infecting case.

Protection.—Where complete protection is desired the maximum dose should be given at the earliest moment after exposure; later than the third day after the rash of the infecting case the prospects of success are small. A protective dose confers no more than a temporary passive immunity.

Attenuation can be achieved by two methods: (*a*) the early injection of a submaximal dose—that is, before the third day; (*b*) the injection of a maximum dose late in the incubation period (L.C.C. Measles Epidemic, 1931–2)—that is, on the sixth day. This latter method has in my experience proved to be the more satisfactory, and for obvious administrative reasons (obtaining parental consent, etc.) the more practicable.

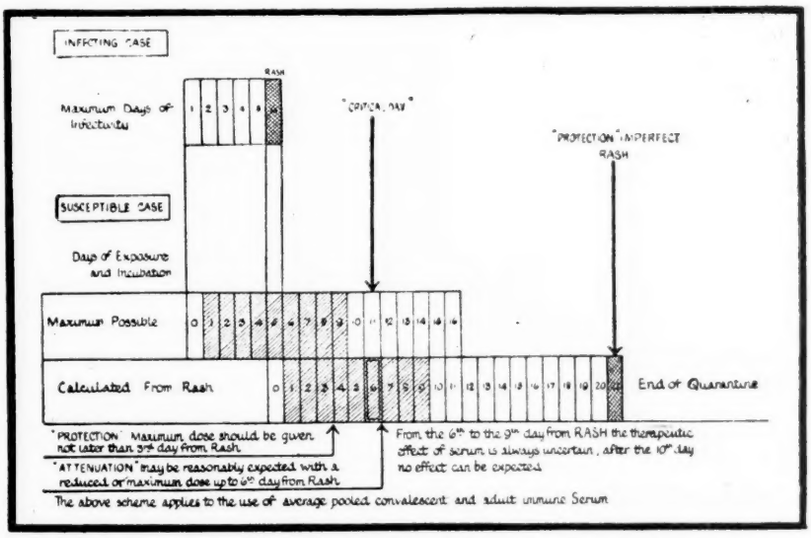
INFECTING CASE
RASH
Maximum Days of Infectivity
"CRITICAL DAY"
"PROTECTION" IMPERFECT RASH
SUSCEPTIBLE CASE
Days of Exposure and Incubation
Maximum Possible
Calculated From Rash
End of Quarantine
"PROTECTION" Maximum dose should be given not later than 3rd day from Rash
"ATTENUATION" may be reasonably expected with a reduced or maximum dose up to 6th day from Rash
From the 6th to the 9th day from RASH the therapeutic effect of serum is always uncertain, after the 10th day no effect can be expected
The above scheme applies to the use of average pooled convalescent and adult immune Serum

FIG. 1.—Scheme of protective therapy. (Reproduced by courtesy of Oxford University Press.)

An Epidemic in a Preparatory School

The epidemic now to be described developed in characteristic fashion from a single case in the first week of the Lent term, 1938, in a school of ninety-five boys. This school experienced a previous epidemic in 1929 (School A: Fig. 2, Table II).

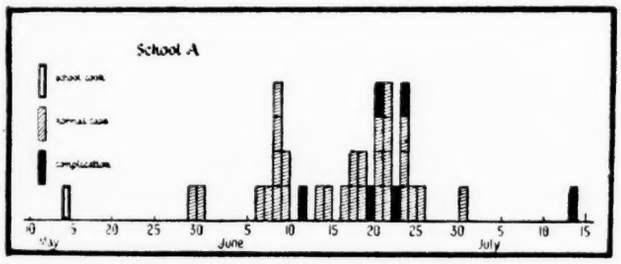

FIG. 2.—Measles in School A in 1929.

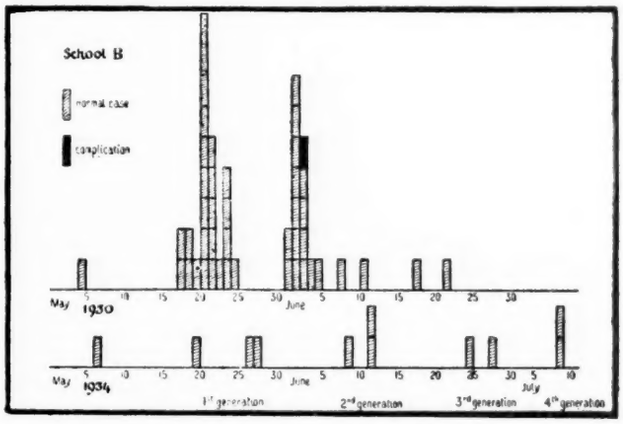

FIG. 3.—Measles in School B in 1930 and 1934.

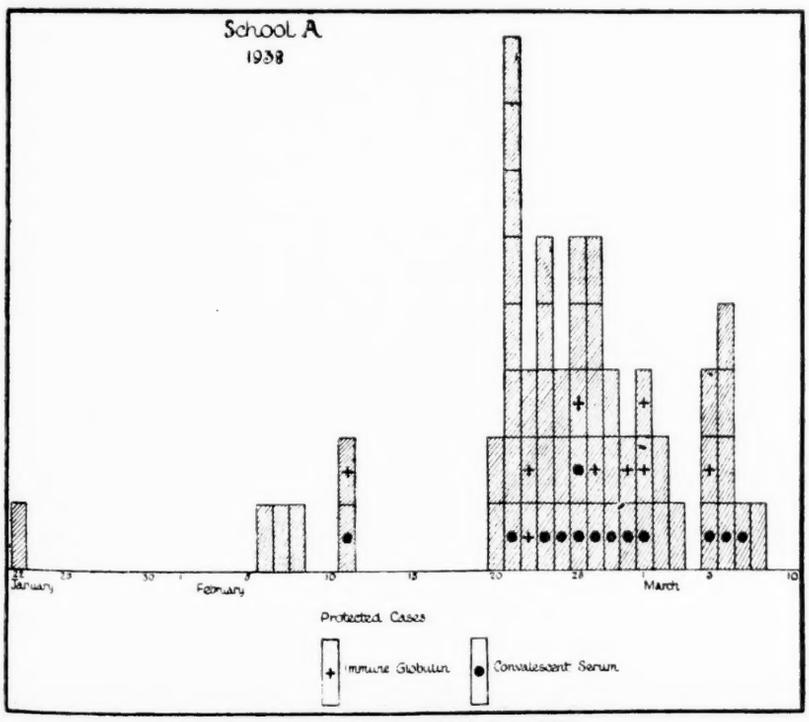

FIG. 4.—Measles in School A in 1938.

There were fifty-six susceptibles. In view of the fact that there was no intercurrent infection in the school or any other special circumstance which might expose those attacked to any undue risk it was decided:

1. To attenuate the attack in all known *delicate susceptibles* with (C.S.) convalescent measles serum (10 c.cm.) on the sixth day after exposure to the initial case. Delicate susceptibles were those children who had suffered from known pulmonary or oto-rhinological disease in the previous year or who had an unsatisfactory previous medical history. Thirteen such cases were selected, and *the parents were notified of this proposed "protective therapy"*; all agreed to its employment.

2. To allow the epidemic to follow its natural course in the remaining forty-three cases. Parents of these children received a notification of the appearance of measles in the school with a recommendation against protection (see letter given above). The parents of nine children insisted upon serum therapy, and in each case the child received (I.G.) immune globulin (10 c.cm.) (£2 2s.) on the *sixth* and *seventh* days after exposure to the initial case.

No specific therapy was employed for the remaining thirty-four boys.

3. The environmental hygiene and nursing precautions described earlier in the paper were rigidly observed.

The results of conducting the epidemic on the above principles and the clinical data so provided may conveniently be summarized under separate headings.

General Results

1. *No complication of any kind occurred in the fifty-six cases attacked.*

2. *All of the C.S.-protected and I.G.-protected cases showed attenuated attacks.* (Fig. 4, Table V.)

Morning and evening temperatures were taken from the first day of term until the completion of the epidemic, and any boy showing a temperature of over 99.5° was isolated for observation. Every child who showed any febrile disturbance was inspected daily.

Prodromal Fever.—The prodromal fever was appreciably shortened in the protected cases. In two cases the rash appeared on the twenty-first day after exposure to the initial case without any prodromal fever or the appearance of any Koplik's spots. (One case C.S., one case I.G.)

Koplik's Spots.—Even in the unprotected the appearance of this characteristic lesion is so late as to be useless as an *early* diagnostic sign; six of thirty-two unprotected cases showed no Koplik's spots before the rash; this applied to eleven of twenty-two protected cases.

TABLE I

	No.	Average Days Prodromal Fever	Average Days Koplik's Spots	No.
Unprotected ..	32*	2.6	1.0	
Protected ..	22	1.8	0.5	
		Actual Days	Actual Days	
Unprotected :	32			
Maximum ..	10	4.0	4.0	1
Minimum ..	7	1.0	0	6
Protected : ..	22			
Maximum ..	2	4.0	2.0	3
Minimum ..	3	0	0	11

* Two boys of the original thirty-four unprotected cases were taken home on the appearance of the initial fever.

Protection (that is, attenuation) was secured by the administration of (C.S.) convalescent serum 10 c.cm. (thirteen cases) and (I.G.) immune globulin 10 c.cm. (nine cases),* which was injected on the sixth day—the "critical day." With one exception—a patient who had been given only 4 c.cm. of immune globulin by his family doctor—the attack of measles was definitely attenuated as regards both severity and the height and duration of the febrile reaction. Two C.S. cases had aborted attacks—that is, a minimal febrile reaction (99.5° to 100°) for three days and a transitory rash.

The convalescent measles serum was obtained from the medical officer of health for Oxford, and was "pooled" serum: the evidence suggests that this was less potent than the convalescent serum employed in School B, 1934, and the larger dose was given on this assumption (Fig. 3, Table IV).

* The claim that immune globulin modifies an attack of measles is sustained, but as the author was sceptical of the claims of this preparation 10 c.cm. was employed, although the makers recommend no more than 2 c.cm. The single case which received a small dose showed *no attenuation.*

Previous experience with measles epidemics can be graphically demonstrated and the lessons learned emphasized.

TABLE II.—*School A (1929). Thirty-six Susceptibles*

	No.	Measles	Escaped
Unprotected	36	36	0
Protected	0	0	0
Total	36	36	0

100 per cent. infected; none escaped; 6 complications (otitis media, 3 cases; bronchopneumonia and otitis media, 3 cases).

Lesson.—The high incidence of complications was attributed to overcrowding, inadequate bed-spacing, and failure to observe a strict environmental hygiene.

TABLE III.—*School B (1930). Sixty-eight Susceptibles*

	No.	Measles	Escaped
Unprotected	65	46	19
Protected	3	2	1
Total	68	48	20

70 per cent. infected; 30 per cent. escaped; 1 complication; 2 protected children who developed measles had modified attacks.

Lesson.—Strict observance of environmental hygiene and a very limited use of convalescent serum proved eminently satisfactory.

TABLE IV.—*School B (1934). Fifty-one Susceptibles*

	No.	Measles	Escaped
Unprotected	2	0	2
Protected	49	10	39
Total	51	11*	41

20 per cent. infected; 80 per cent. escaped; no complications; 10 protected children developed measles and 6 of them had modified attacks.

Lesson.—An extensive use of convalescent serum to produce a mass "attenuation" produced an almost complete mass "protection."

During the previous term whooping-cough and a widespread nasopharyngeal epidemic due to *S. pyogenes* suggested the wisdom of such an attempt to mitigate the severity of measles in a population which might contain numerous carriers of virulent streptococci. The convalescent serum employed for this purpose was obviously of a very high potency (the bulk having been obtained from two recently recovered adults), as shown by the fact that the protected susceptibles were exposed for ten weeks to fresh cases. An average dose of only 6 c.cm. was given on the sixth day after exposure (Hobson, 1934).

TABLE V.—*School A (1938). Fifty-six Susceptibles*

	No.	Measles	Escaped
Unprotected	34	34	0
Protected	22	22 (attenuated)	0
Total	56	56	0

100 per cent. infected; none escaped; 6 complications (otitis protected cases all had attenuated attacks.

Discussion

The preparatory school of about 100 inmates is an almost ideal unit for purposes of epidemiological study, and the experience gained in handling such units may reasonably be expected to provide the materials for the formulation of principles in the conduct of epidemic disease in larger communities. The size, character (day or boarding), composition (age and sex), and location of a given school may introduce a number of variable factors into the problem of the conduct of an epidemic; nevertheless the principles in conducting such an epidemic must hold if such be correctly conceived. Measles is a disease which is peculiarly suitable for such a study.

* One boy stated to have had measles and therefore not protected by serum developed measles, possibly a second attack.

I have endeavoured in this article to formulate those principles which seem to me fundamental, and to demonstrate that in practice they can be effective.

Conclusions

The principles for the conduct of an epidemic of measles in a self-contained school community are discussed, and their application in practice is illustrated in four epidemics. These principles are:

1. That healthy susceptible individuals should be permitted to experience a normal attack of measles after exposure to infection.

2. That "delicate susceptibles" should be protected. "Delicate susceptibles" fall into two categories: (*a*) those for whom complete "protection" should be secured; (*b*) those for whom "attenuation" should be a sufficient safeguard from undue risks.

3. That environmental hygiene must be strictly practised in sick-rooms for all cases.

Experiences in the use of protective serum are described and emphasis is laid upon the inherent difficulties of posology. In practice the date of administration should be calculated from the rash of the infecting case. For *protection* a maximum dose should be given at the earliest opportunity after exposure and never later than the third day. For *attenuation* a maximum dose should be given on the sixth day.

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SUBVESICAL DIATHERMY PROSTATECTOMY

BY

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Perurethral resection of an obstructing prostate seems by now to have won an established place in genito-urinary surgery. Opinions vary as to the type of case in which it is best employed, though most surgeons are agreed in preferring prostatectomy when dealing with a prostate which is much enlarged. It should be remembered that when the enlargement is of a benign type the chief indication for advising such treatment is precisely the same as when prostatectomy by any other method is chosen—that is to say, the presence of residual urine. If this amounts only to an ounce or two it is unnecessary to employ either perurethral resection of the prostate or any other surgical treatment. But although the measure of the residual urine is by far the most important guide to treatment, obstruction may sometimes call for operation when the volume of it is not large; for if the act of micturition is unduly difficult and prolonged the patient may experience much inconvenience, particularly when nocturnal frequency is present. Attention should also be given to the cystoscopic appearances of the bladder wall, and marked signs of stress, as evidenced by the presence of excessive trabeculation, or, more important still, sacculation, are an indication for the relief of the obstruction.

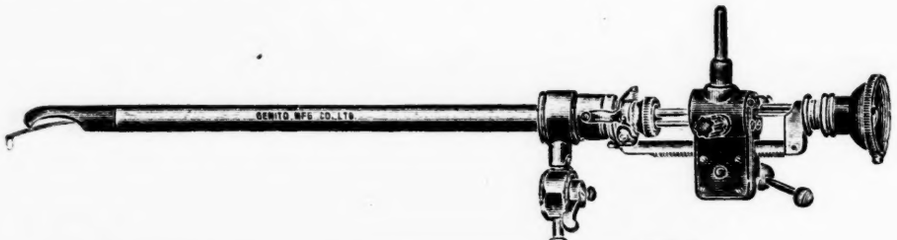
The Usual Method of Resection

When early cases are treated very few cuts with the diathermy loop in the middle line and to right and left of it are all that is necessary, and the same applies when the prostate is of the small but highly obstructive type. It is when the prostate is moderately or much enlarged that the operation becomes more difficult and more formidable. The dangers which attend it are *haemorrhage* and *sepsis*. *Haemorrhage* is inevitable. It is slight when fibrous prostates are treated, and not usually abundant in cases of carcinoma, though in some of these it is severe. It is more profuse when cases of benign enlargement are operated upon. Much of the bleeding comes from the region of the internal meatus, where the diathermy loop cuts through the highly vascular trigonal mucosa, beneath which lie also some of the most important arteries supplying the prostate itself. It is from this same region that a very large amount of bleeding occurs in prostatectomy by enucleation. *Sepsis* is common and often serious. It occurs because necrosis is produced by cutting with the diathermy loop. In the ordinary method of resection not only is the surface of the residuum of the gland which surrounds the prostatic urethra thus necessarily affected, but a large portion of the trigone is also removed, sometimes almost up to the ureters, for it is only by sacrificing this that the diathermy loop can be engaged in the lateral lobes after the intravesical projection has been dealt with. This is because the loop only moves and cuts along the axis of the resectoscope sheath. If at the end of such a resection the bladder is opened it will be found that a cone of tissue has been resected from the prostate. The apex of this is in the region of the verumontanum, and its base corresponds to the trigone and the area immediately around the internal urinary meatus. An exploratory finger now passes along the posterior bladder wall, over the interureteric bar, and down into the prostatic region, which is found to be laid wide open because a large part of the bladder base has inevitably been cut away. This is, of course, quite different from the condition which exists when the operation of prostatectomy by enucleation is employed, whether by the suprapubic or the perineal route. In such cases the internal meatus, though expanded, is still comparatively small; beneath the neck of the bladder there is a recess, the prostatic fossa, between it and the triangular ligament, from which the prostate has been removed. It is easy to feel and to see that the trigone itself has been left almost intact.

The Modified Technique

It has seemed to me that such methods of perurethral prostatectomy should be avoided, and that an endeavour should be made to make the anatomical result resemble as closely as possible that of prostatectomy by enucleation. To achieve this it must be practicable to resect the gland from around the prostatic urethra and from beneath the trigone without cutting or in any way damaging this structure, except to a very limited extent in the neighbourhood of the posterior mid-line, where this occurs in the process of removing the intravesical projection itself. With this in view I suggested to Mr. Schranz of the Genito-Urinary Company that an inclined plane should be built into the end of the beak of the McCarthy resectoscope, which would push forward the supports of the loop as this

is wound out of the sheath into the cutting position. (See Fig.) This has been successfully achieved in the model which he has produced for me, and as a result the whole extent of the loop projects in front of the sheath when it is in the extreme forward position. For this reason, and because it is firmly supported, the loop, when activated by the diathermy current, can be buried into the prostate much more deeply than is possible in the older type of instrument. At the conclusion of the cut it is automatically withdrawn into the confines of the sheath. The resection is begun in the middle line posteriorly; first the loop may be placed over the intravesical projection in the usual manner until it is hidden from view; one such cut being usually sufficient. After this the loop is not again allowed to enter the bladder cavity, but from now on is placed always under vision in position against the prostate within the urethra at a level immediately below the internal meatus. At the moment when the current is turned on the loop is first embedded in the tissues at this level by pressing the beak of the sheath firmly in the required direction, and then the cut is made from there downwards. In other respects the procedure is that usually practised—namely, as much resection as is desired is carried out on one lateral lobe before treatment of the other side is begun. These cuts, beginning always within the prostatic urethra, resect chiefly the lateral lobes, but must be continued well round to include the front of the gland on both sides. Even with the aid of these new loops, and the advantage which they give, it will be found that sooner or later a stage is reached when further cutting into the lateral lobes is mechanically impossible.



At the end of a perurethral resection conducted in this manner, if the instrument is withdrawn so that the objective of the telescope lies at the level of the verumontanum, one finds oneself looking into a recess which has been excavated beneath the bladder, and at the top of this is a small opening into the bladder; in other words, the result is very similar to that which is produced after a prostate has been enucleated. The opening into the bladder can easily be enlarged if it is desired, but I feel sure that the less of the trigone that is resected the better from the point of view of immediate haemorrhage and subsequent sepsis. Because the aperture which leads from the prostatic fossa into the bladder is small, some care is necessary in passing the catheter, which is to be left in position, as the point of it tends to be held up in the prostatic bed.

If this technique, which may be called *subvesical* diathermy prostatectomy or prostatic resection, is employed it will be found that haemorrhage is less than with the older method, and that it is more easily controlled. Sepsis is also much diminished, owing, I believe, to the fact that the trigone is left almost entirely intact instead of being mutilated. One complication which is unavoidable when this new type of diathermy loop is employed is that the pieces resected are often too large to wash out through the resectoscope, and it becomes necessary to recover them at the conclusion of the operation by aspiration, using the bulb of a Bigelow's evacuator attached to the sheath of the resectoscope by a short metal adaptor, or by grab forceps. Since larger pieces are cut away by these loops than by those of the original type it is possible to work through a smaller sheath, and one of 26 Charrière scale will be found very efficient. The risk of damage to the urethra is thereby lessened.

The New Model Resectoscope

The new model of McCarthy resectoscope made by the Genito-Urinary Company is in several other respects a great improvement upon the previous models, from which it has been evolved. The sheath, like the recent American pattern, is metal outside with the exception of the bakelite beak, and this part of the instrument is now made shorter than in the original models—a modification which is essential if resection is to be carried out beneath the trigone, for which same purpose, as has been explained, the projecting loops have been specially designed. The projecting loop has the further advantage that it is more easily seen than are those of the older patterns, being nearer to the centre of the telescopic field when in the extreme forward position from which the cut is begun. These loops, the manner in which they are supported, and the new system of flushing are the only components for which I can claim originality. The tap will be found satisfactory, as it gives simplified control and allows of a larger current of water. Particular care should be taken not to over-distend the bladder, and therefore the top water-level in the irrigator should not be more than eighteen inches above the patient's abdomen.

A course of lectures and clinical instruction for medical practitioners on problems connected with retarded and difficult children has been arranged by the University Extension and Tutorial Classes Council, in co-operation with the Central Association for Mental Welfare, and will be held from Monday, November 7, to Saturday, November 12. It is open to those practitioners who have already attended the course on mental deficiency and allied conditions, or who have specialized experience approved for the purpose of the course. The lectures will be delivered at the University of London, Senate House, Bloomsbury (entrance from Russell Square), unless otherwise stated on the students' time-tables, and will be given from 10 a.m. to 12.30 p.m. each day. Detailed time-tables will be sent by October 31 to each person proposing to attend the course, and forms of application should be filled in and returned not later than October 7. The University will grant certificates of attendance to those who attend regularly, taking both theoretical and practical work. Registration fee, 10s. 6d., fee for the course £3 3s. All communications should be addressed to Miss Evelyn Fox, c/o University Extension Department, University of London, W.C.1.

RUPTURE OF THE UTERUS DURING PREGNANCY

BY

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The case of rupture of the uterus during pregnancy which is described in detail and discussed in this paper was that of a primigravida, aged 20, admitted to the Prince of Wales's Hospital, Plymouth.

Clinical History

The patient was thirty-two weeks pregnant, and had been attending an ante-natal clinic and had enjoyed health during the whole of her pregnancy. There was no history of any pelvic pain even during the early weeks of pregnancy. On the morning of admission to hospital she sat up in bed and was seized with severe abdominal pain. During the course of the morning she sent for a midwife, who found her walking about her room complaining of a pain in the lower part of the abdomen on the right side. The midwife put the patient to bed and sent for the family doctor. He sent the patient to hospital, having diagnosed acute appendicitis. She was admitted to hospital shortly after midday, and was observed by one of us (J. S.).

On admission the patient looked pale and toxic. There was not any restlessness, but her respirations were rather rapid and there was some dyspnoea. The pain was referred to the right hypochondrium and was of a colicky nature. There was some tenderness in the right hypochondrium, but not any rigidity, and pressure here resulted in a series of short, rapid respirations. The uterus appeared normal for a thirty-two-week pregnancy, and a living child in the left occipito-anterior position was diagnosed.

The urine was carefully examined to exclude a pyelitis and a physician's opinion obtained to exclude an acute diaphragmatic pleurisy. The tenderness appeared to be too high for appendicitis and the history did not support such a diagnosis. A provisional diagnosis of an acute cholecystitis complicating pregnancy was made, and the patient was placed in the Fowler position and put on fluids for observation. During the next few hours the pain did not show any signs of abating and the tenderness had increased. A further opinion was sought.

Further Examination of the Case

The patient was referred to me (J. R.) at 10 p.m. on the evening of her admission to hospital. She was complaining of severe pain under the costal margins and under the shoulder-blades and was in great distress, particularly with dyspnoea. There was not any pain referred to the shoulders.

The outline of the uterus was regular and was clearly defined. The uterus was enlarged to the size of a thirty-two-week pregnancy. The foetal heart sounds were heard. Above the level of the uterus the abdominal wall was flaccid, but there was pronounced tenderness under the costal margins. There was slight bleeding from the vagina. The external os was closed. The patient was not in labour. Examination of the chest did not disclose anything abnormal. The urine was free from pus cells and *B. coli*. The temperature was 98.8°, pulse 120, respirations 28.

I was not able to make a diagnosis, though I considered that an acute abdominal emergency might be in progress, possibly an internal haemorrhage. I was not able to satisfy myself that there was sufficient evidence to warrant opening the abdomen that night. I desired to wait and to make further observation. An hourly pulse chart was arranged for, and a request was made that I should be called if the pulse rate increased appreciably. A third of a grain of omnopon was administered hypodermically. The patient slept, and the pulse rate fell to 90 by 6 a.m.

I saw the patient next day shortly before 1 p.m., when I found that the clinical picture had changed. The patient was sleeping, but her face had a more distressed expression; she looked pale, with shallower, rather quicker, and slightly more embarrassed respiration.

The abdominal wall was rigid and tense, the uterine outline was not manifest any longer, there was a more diffuse swelling of the abdomen due to some distension. Liver dullness was absent. I made a diagnosis of internal haemorrhage. Rupture of the uterus was discussed, but there was not sufficient evidence to support that diagnosis with confidence. There was only sufficient evidence to warrant a diagnosis of internal haemorrhage.

Operation

The patient was removed to the operating theatre. I opened the peritoneal cavity through a left paramedian incision, partly above the umbilicus and partly below, in order that I might have liberty to enlarge it upwards or downwards, depending upon what was discovered to be the source of the bleeding.

On opening the peritoneal cavity a bag of membranes was seen. Rupture of the uterus was now obvious. The incision was extended downwards. The uterus was felt contracted in the bottom of the pelvis. The foetus (dead), membranes, and placenta were removed. The uterus was lifted up. At the right cornu a four-inch rent extended down the right side of the uterus. The uterus was elongated and marrow-shaped.

At the site of the rent the wall of the uterus was thin. Bleeding was not in progress, though there was a considerable quantity of blood in the peritoneal cavity. I did not waste time exploring the inside of the uterus. The right tube was not continuous with the uterine wall. It looked natural and healthy, except that it ended proximally in a healed stump, as though it had been amputated. The centre of the rent in the uterus corresponded with the point at which the tube would normally have become continuous with the uterus. The right ovary was calcified. The left tube and ovary were natural.

The rent in the uterus was sutured, most of the blood was removed from the peritoneal cavity, drainage was provided, and the patient was returned to bed as quickly as possible. She recovered quickly, and went home on the fifteenth day after operation.

Remarks by Mr. James Riddell

In the case of rupture of the uterus during pregnancy which I described in 1926 there had been previous damage to the uterus following miscarriages. Hysterectomy was employed and the patient recovered. In the case now under review there had not been any operation upon the uterus. There was not any history of injury or violence of any kind.

Munro Kerr has described "angular" pregnancy, and he states that atypical examples may be encountered, partly "interstitial," partly "angular." It is suggested that this case is an example of a pregnancy partly "interstitial," partly "angular." Munro Kerr quotes Kupferberg, who described a case in which the body of the child was in the tube and the head in the uterus. The "interstitial" element would account for the erosion of the tube by the

trophoblast and its gradual amputation from the body of the uterus. It is not possible for a developmental defect to account for the want of continuity between the tube and the uterus. The tube was properly developed, and was not in any way under-developed. The uterus was properly and naturally developed. It is possible that after the erosion of the tube the ovum may have moved a little more downwards and embedded itself more comfortably in the uterus.

The ovum developed not *in substantia uteri* but towards the uterine cavity, though almost wholly in it, and that constitutes the "angular" element which led to thinning out of the wall of the uterus at the right cornu. Eventually the wall of the uterus became so thin that the exertion of sitting up in bed was enough to rupture it. There was not any recognizable lateral distension of the uterus in the region of the uterine cornu. Obliquity of the uterus was not observed before the operation, and there was not any evidence of it at the operation. There was only thinning of the wall at the right cornu.

Lateral distension of the uterine cornu is one of the main features described by Munro Kerr. Therefore there must be grades of cases—if my explanation is correct—some without much lateral distension of the uterus. Most "angular" pregnancies produce great pain and lead to abortion. If there were not much sacculation at the cornu but only thinning of the uterine wall, and if the ovum found a more secure resting place, then abortion would not be likely to occur. This would explain why the patient did not abort.

If my explanation is not correct, then one must suppose that the ovum was properly embedded in the uterus from the start and that the amputated tube and the thinned-out cornu did not have any relation to it, but were entirely unconnected with it, being due to some pre-existing unexplained disease or injury.

The patient has promised to report if she becomes pregnant again in order that her progress may be watched.

Summary

1. The clinical history of a case of rupture of the uterus during pregnancy is reported. The patient recovered after suture of the rent.

2. It is suggested that the cause of the rupture was a pregnancy partly "interstitial," partly "angular."

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The two Chambers of the Swedish Riksdag have passed a Bill for public dental care. The new Act provides for dental treatment for all infants and school children, as well as for adults, at a nominal charge, or free of charge in the case of families of small means. As regards children public dental treatment will be available to all between the ages of 3 and 15 years. The annual fee is 5 kr. for the first child, and 3 kr. and 2 kr. for the next two children, of a family registered at one and the same time for receiving State dental care. If there are more than three children in a family the rest will be treated free. As regards adults, treatment is to be given at cost price, or at a reduced fee or gratis when warranted. The Act provides for a division of Sweden into dental districts, with whole-time dentists and attendants for each. The cost of organizing and maintaining the service will be divided between the State and the county councils or municipalities.

Clinical Memoranda

Concurrent Puerperal Anaerobic Streptococcal and Staphylococcal Septicaemia with Recovery

We feel that points worthy of notice in this case are, first, the unusual combination of organisms in the blood stream; secondly, the response to staphylococcal antitoxin in a patient who was gravely ill; and, thirdly, the presence of septicaemia after a considerable amount (66 grammes) of sulphanilamide had been given. The response to the staphylococcal antitoxin suggests that the presence of the anaerobic streptococci in this case was of minor importance.

Mrs. M., aged 32 years, was delivered of her second child on February 15, 1938. The first and second stages of labour were normal, but there was delay in the delivery of the placenta, which was removed manually under general anaesthesia. On the following day the patient complained of intense headache, shivering, and insomnia. She vomited several times. In the evening her temperature rose to 101° F.

She was admitted to hospital on February 17. Her temperature was 98° F., pulse 108, and respirations 24. She was pale and appeared ill. The fundus of the uterus was palpable two inches below the umbilicus and was not tender. Vaginal discharge was scanty and haemorrhagic. Examination of other organs showed no abnormality. Sulphanilamide 4.5 grammes was given daily by mouth, and 1 c.cm. pituitrin hypodermically twice a day.

The day after admission she passed a piece of membrane per vaginam. Next morning her temperature rose to 101.2° F. and her pulse rate to 120 per minute. Her condition became steadily worse, and on February 24 the temperature was 103.2° F. and she had a slight rigor. On the following day 20 c.cm. scarlatinal antitoxin were given intramuscularly and 60 c.cm. intravenously on the 26th; after this her temperature fell to normal for the first time for seven days, but rose again next day and continued to swing between a maximum of 104.2° F. and a minimum of 99° F. for the next three weeks.

On March 3 a blood count showed: Red cells 2,164.000 per c.mm. White cells 3,600 per c.mm. (polymorphs 64 per cent., lymphocytes 32 per cent., monocytes 3 per cent., eosinophils 1 per cent.). Haemoglobin 30 per cent. Colour index 0.7. Reticulocytes 4.5 per cent. There was marked anisocytosis and some poikilocytosis of erythrocytes.

Blood culture on March 4 gave a growth of non-pigmented staphylococci which were thought to be due to contamination of the culture. Her clinical appearance now became typically that of septicaemia, and on March 6 she was given a transfusion of 15 oz. of her husband's blood; this was followed by some temporary improvement. On the 9th the blood culture was repeated and gave a similar growth of staphylococci, which were haemolytic and showed slight pigmentation of the *aureus* type at the end of forty-eight hours' incubation. An anaerobic culture was made simultaneously, and this showed the presence of anaerobic streptococci as well.

It was now decided to give staphylococcus antitoxin. As she had had serum a fortnight previously she was given two small desensitizing doses of the antitoxin subcutaneously at an interval of three hours, and later the same day (March 12) 10,000 units intramuscularly. This latter dose was repeated on the following day. By this time her condition was very poor: temperature 104° F., pulse rapid, skin yellow, and mucous membranes pale; there was a systolic bruit at the apex and she was incontinent of urine and faeces. She had also developed a massive generalized oedema involving all limbs, face, and back, which may have been due to the serum.

On March 14 another 10,000 units of staphylococcal antitoxin were given intramuscularly, followed by 10,000 units intravenously. Just after this the patient collapsed, but rallied a little on the injection of adrenaline, icoral, and continuous rectal saline and glucose. During the next three days she seemed to be *in extremis*, but on March 17 the temperature and pulse rate began to fall, and by the 22nd were normal. Her general condition improved, she became rational, the oedema disappeared, and she regained complete sphincteric control. From this time steady progress was made without complications or rise of temperature.

On April 22 a blood count showed: Red cells 3,046,000 per c.mm. White cells 8,600 per c.mm. (polymorphs 55 per cent., lymphocytes 36 per cent., large mononuclears 7 per cent., eosinophils 1 per cent., basophils 1 per cent.). Haemoglobin 65 per cent. Colour index 0.9. Reticulocytes 1.6 per cent. A blood film showed hypochromia of red cells, otherwise nothing of note.

The patient was discharged well on April 30. Other medicaments used in the treatment of the case were vaginal douches, potassium citrate, Blaud's pill, and various sedatives. Total dosage of sulphanilamide was 66 grammes. Administration of this latter drug was stopped on March 3.

We wish to thank Dr. W. Edge, medical superintendent, Ladywell Isolation Hospital, for permission to publish this case.

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Simultaneous Fracture of Both Wrists

The following case of simultaneous fracture of both wrists may be of interest as demonstrating the rapid restoration of function and the minimal period of disability, under treatment by Böhler's technique.

CASE REPORT

On November 7, 1937, a Cambridge undergraduate, a member of the Climbing Club, fell 20 feet from a tree, landing on both hands with the wrists in flexion. He could use neither hand owing to pain and swelling, and was brought to see me by a friend. The right wrist was swollen and very painful, and there were fusiform swellings on the dorsum of the wrist, more marked on the radial side, corresponding to the extensor sheaths. There was no bony displacement palpable and no history of "cracking" at the time, or of crepitus since he sustained the injury. The left wrist-joint was also generally swollen and there was tenderness and more marked swelling over the styloid process of the ulna, with no obvious sign of fracture. The patient was unable to use either hand in any way. He could not lift a cup of tea, fasten a button, open a door, or do anything at all for himself. For this reason he was admitted to a nursing home, and the wrists were at once supported by elastoplast, reinforced with interlocking split-tailed strips of plaster, the right wrist being put up temporarily on a Carr's splint. *X*-ray examination showed a fracture of the lower end of the right radius just above the wrist-joint, with no displacement, and a fracture through the base of the styloid process of the left ulna, with minimal displacement. In addition there was obviously acute traumatic synovitis of both wrist-joints and acute traumatic tenosynovitis of most of the extensor tendon sheaths on both sides.

On November 8, after the results of the *x*-ray examination were known, a 6-inch dorsal "cellona" slab was applied to the right forearm from just below the elbow to the level of the heads of the metacarpals. The cast was completed according to Böhler's method of treating a Colles's fracture, with the palm left free save for a copper wire across the distal crease, a modification suggested by K. Pridie. The left forearm and wrist were treated in the same way. The patient was instructed to use both hands freely. On the following day, at 9.30 a.m., the patient was able to write his name legibly but poorly; he gripped and used a tumbler with either hand; picked up small objects; and was able to help in dressing himself. By 5 o'clock that day his signature had improved, he was able to lift both arms above his head, and he could carry a bag of instruments without pain. His grip was already much stronger. Later, he was able to use a knife and fork and take his own dinner. After three days he returned to his college, attended all his lectures, and dined nightly in Hall. In fact, he lived a normal life except that he did not play games. Three and a half weeks later the plaster casts were removed and the movements of the wrist-joints were found to be practically normal as regards flexion and extension. Pronation and supination became full in a few days' time.

Cambridge. R. SALISBURY WOODS, M.D., F.R.C.S.

A Case of Locked Twins

Owing to the rarity of "locking" complicating labour in twin pregnancies, the following notes on a case recently met with may be of interest.

HISTORY OF CASE

A woman aged 24 was pregnant for the second time, the first pregnancy having ended in abortion at six weeks. During the present pregnancy she had a threatened abortion at twelve weeks and later developed mild albuminuria, which settled with rest in bed.

Labour started in the morning of February 2, a fortnight before term. Uterine contractions were weak and infrequent, but by 3 p.m. on February 3 the second stage of labour appeared to have begun. At 5 p.m. a vaginal examination was made and a vertex (right occipito-anterior) felt low down in the pelvis; the cervix was fully dilated and the membranes ruptured. By 6.30 p.m. no progress had been made and meconium began to pass per vaginam. At this time the patient's general condition was very fair. Pains were regular, the uterus was rather tender and irritable, making abdominal examination difficult, but a head could be made out entering the pelvis.

Vaginal examination under anaesthesia revealed a small head low down in the pelvis, presenting as a right occipito-anterior with a loop of cord prolapsed alongside it; this was pulsating regularly. On further investigation a second head was found in the pelvis, presenting as a left occipito-posterior, somewhat to the left of and posterior to the first. It was at a higher level, in contact with the anterior shoulder of the first foetus, which it was preventing from descending further. The membranes of the second sac were intact.

The second foetus was pushed up out of the pelvis and the first delivered with the forceps. It was rather shocked, but soon recovered. After fifteen minutes the second head was found to have descended on to the pelvic floor, and the membranes were ruptured and five units of pituitrin given, as uterine contractions were very weak. There was little response to the pituitrin, so this foetus, still occipito-posterior, was also delivered with the forceps. It was in good condition and cried at once. The third stage lasted about fifteen minutes, when both placentae were expelled together. There was very little haemorrhage.

The children were female binovular twins weighing 4 lb. and 3 lb. 12 oz. respectively. The placentae were entirely separate. Subsequent progress of all three patients was uneventful.

"Locking" of twins is generally attributed to deficiency of liquor amnii in cases where there is a relatively large pelvis. In the case reported the pelvis was of average size (external measurements 10½, 11½, and 8 inches), but the foetuses were small. At the time of delivery the first amniotic sac was "dry" and the second contained only an ounce or two of liquor.

H. CRAVEN PETCH.
Harrogate. THOMAS A. BEST.

Reviews

AN ANTHROPOLOGIST SPEAKS OUT

Apes, Men and Morons. By Earnest Albert Hooton. (Pp. 307. 10s. 6d. net.) London: George Allen and Unwin. 1938.

Dr. Earnest Hooton, the distinguished professor of anthropology in Harvard University, has come to occupy a favoured place in the minds and hearts of his fellow-countrymen. This is because he has added to the erudition of his special subject a power to see things with the humorous eye of Mark Twain and the courage to force unpleasant truths upon the consideration of his readers. The burden of his book is this: Unless civilized humanity pays some attention to the kind of progeny it begets, then its doom is sealed. "Man has tried to improve everything except himself," he exclaims. And again: "Man is a tottering biped and we must look to his organic underpinning"—the underpinning being man's "animal self." In brief, what is needed first and most is that the great public should become familiar with the elements of their own physiology. But alas! it must also be added that Professor Hooton has no confidence in the wisdom or judgment of the man in the street.

It must not be inferred that *Apes, Men and Morons* is a sermon preached on a single text. Taking it all and all it is the best popular summary available of the hundred and one problems that are now occupying the attention of anthropologists and eugenists in all countries of the world. Although the contents of this book represent a series of addresses given at sundry times to diverse audiences, yet the subjects were so chosen that the whole field of anthropology is covered in a systematic manner. The history of man, as revealed by fossil bones, is well told; then follows an exposition of our present knowledge—and lack of knowledge—of the evolution of man. Then living races and types of mankind are passed in review; then follows a special section—Professor Hooton's own section—that of social anthropology. Lastly, a eugenist chapter—"What must we do to be saved?"

There may be exaggerations and excesses here and there, but there is also much real wisdom as well as learning; there is certainly not a dull page in the book.

A. K.

CONTROL OF DISEASE

General Hygiene and Preventive Medicine. A Textbook for College Students, Medical Students, Nurses, Public Health Workers and Social Workers. By John Weinzirl, M.S., Ph.D. Edited by Adolph Weinzirl, B.S., M.D. (Pp. 424; 18s. net.) London: Henry Kimpton. 1937.

In presenting a medical subject to the generality it is sometimes difficult to fix upon a grouping or arrangement of the material which will appear sensible to the non-medical reader without doing violence to the facts of medicine. The purely aetiological approach is usually barred since it presumes previous knowledge, and other ways, less good in themselves, may have to be sought out. In their recent work on hygiene, addressed in part to lay persons, including teachers, philanthropists, publicists, and others, Professors J. and A. Weinzirl have grouped the disease conditions which they describe in the light of the means adopted for their control. "An attempt has been made," they say, "to subordinate facts to methods." So spake, or might have spoken, Procrustes as he lopped or stretched his guests to fit the notorious bed. Here and there in the book, as is almost inevitable in the circumstances, we encounter the Procrustean touch, as where it is said that the "incubationary stage" of acute alcoholism is a matter of hours. Nevertheless, for a work written with a view to the enlightenment of laymen, the criterion "what is being done" is, we think, happily chosen. It is calculated to appeal to the practically minded average man, who, after all, will not go far wrong if he thinks of small-pox as a disease to be controlled by vaccination, scurvy by correct feeding, malaria by dealing with the mosquito, and moronism, *Anglice* feeble-mindedness, by the application of eugenic measures.

The book by the two professors is sound in the essentials. It is wide in range, adequate in detail, and informative without over-elaboration. It will interest those for whom it is principally intended and will be found of service also by medical officers.

A STUDY OF CEREBRAL FUNCTION

The Brain and its Environment. By Joseph Barcroft. (Pp. 117; 30 figures. 9s. net. 2 dollars.) London: Humphrey Milford, Oxford University Press; New Haven: Yale University Press. 1938.

This book is founded on the Terry Lectures delivered by Sir Joseph Barcroft at Yale University in 1937 and is a study of the relation between the functional activity of the mammalian brain and the internal environment during the changes from intra-uterine to adult life.

The investigation has been carried out in both sheep and goats. It is shown that the oxygen supply does not increase during the last third of pregnancy, although the weight of the foetus increases tenfold. The result of this is a marked fall in the oxygen pressure in the blood supplying the brain over this period. A study of the reactions of the developing nervous system reveals that at the end of the first third of pregnancy movements can be elicited in response to tactile stimulation which correspond to the locomotor and respiratory functions which will come into play after birth. Such movements are either abolished by asphyxia or are replaced by a more primitive and generalized response. During the remainder of pregnancy these reflex activities are inhibited by the development of higher centres in the nervous system which are themselves put out of action and the early reflexes re-established by asphyxia.

At birth both the external and internal environment of the brain undergo abrupt change. The oxygen saturation of the carotid blood was directly measured electrically, and in this way a comparable photographic record was obtained of the activity of the respiratory centre and the oxygen supply to the brain. From this the author comes to the conclusion that the respiratory centre is stimulated at birth primarily by cutaneous sensations (cold, manipulation, etc.), and secondarily by the effect of asphyxia in releasing the primitive respiratory movements from the inhibitory control of the higher centres. It is also shown that the cardio-inhibitory, the cardio-accelerator centres, and those responsible for the maintenance of muscular tone are brought into play by the advent of sustained respiration at birth.

With regard to the factors controlling the oxygen supply of the brain at birth, it is shown that the nature of the haemoglobin is changed before birth, so that the foetal type of oxygen dissociation curve is replaced by the adult type, which is more suitable for the higher oxygen pressures encountered in post-natal life. Furthermore, evidence is brought forward to show that the ductus arteriosus is closed abruptly at birth by a neuromuscular mechanism developed during foetal life. Finally, the

author discusses the effect of changes in the internal environment in the brain of adult human beings and shows that excess or deficiency of oxygen, carbon dioxide, glucose, water, and salts, and variations in temperature produce effects which can be classified as either excitatory or depressive. He concludes with a reaffirmation of Claude Bernard's words, "that the fixity of the internal environment is the condition of the free life"—that is to say, the development of the intellectual powers of man.

Clearly this is a valuable contribution to the study of cerebral function, which is one of the most important fields of research at the present time.

A MANUAL OF OTOLOGY

Kurzes Handbuch der Ohrenheilkunde. By Dr. Hermann Marx. (Pp. 846; 465 figures, many in colour. RM. 46; bound, RM. 48.50.) Jena: Gustav Fischer. 1938.

Professor Marx's recently published *Short Manual of Otology* runs to over 800 pages and covers the whole ground in an extremely able manner. The matter is arranged on the recognized lines: a general section dealing with a description of the anatomy and physiology of the ear and the functional tests (142 pages); a special section (600 pages) dealing with the diseases of the ear—inflammatory, new growths, traumatic lesions, and congenital deformities, in that order. The author's views and theories are mostly the orthodox ones, but in many sections the more individual teaching of the Würzburg school is obvious. In the physiology chapter the tympanic muscles are described as a "protective mechanism," and it is stated that there is not sufficient evidence to support an "accommodation theory." The two tympanic muscles are not antagonistic and their contraction serves only one purpose, which is to protect the cochlea against too intensive sound impressions, especially of the high-pitched variety.

The semicircular canal function and tests are dealt with exhaustively. On the other hand, the reflexes of the otolith end-organs, in spite of the enormous literature which already exists on the subject, are dismissed in a one-page paragraph, because it has now been shown that "tonic" labyrinth reflexes function even after destruction of the macula in the saccule, and therefore the question of the reaction of position is still unsolved. A most useful distinction is made between the pathology of acute and that of chronic middle-ear suppuration. The usual end-result of acute middle-ear suppuration is *restitutio ad integrum* (p. 197). Chronic suppuration does not result from neglected acute suppuration but has an insidious origin, and the seeds of chronicity are there from the beginning. Here the author, on the whole, accepts Wittmaack's theory of the infantile hyperplastic changes in the tympanic mucous membrane. Much futile discussion would be saved if this aspect of the pathology of middle-ear suppuration were always borne in mind.

In the after-treatment of mastoid abscess Professor Marx advises against packing because this carries a risk of fistula. The wound is closed straight away except for a strip of gauze in the lower angle. The so-called "recurring mastoiditis" is not an osteitis but simply a formation of pus in the old scar tissue; a stab incision to let out the pus is sufficient in such cases. An interesting end-result of sinus thrombosis, not usually described in textbooks, is the organization and calcification of the clot. A complete bony occlusion of one transverse sinus may result, and one such specimen is illustrated. In the chapter on syphilis of the inner ear it is clearly stated that salvarsan is not the cause of the damage to the eighth nerve. When deafness, tinnitus, and vertigo arise in the course of treatment the salvarsan injections must be persevered with until the inner-ear symptoms disappear. Acusticus tumours, although arising in the cerebello-pontine angle, are dealt with because they must be considered as tumours of the ear organ.

The illustrations throughout the book are well chosen and well printed. As a model of clearness one may specially commend Fig. 33, which illustrates the complicated anatomical relation of the levator palati and tensor palati muscles to the Eustachian tube. The series of actual photographs of benign and malignant tumours of the pinna and meatus and those illustrating congenital deformities of the outer ear are particularly successful. We note as a useful feature the full references to current literature which are given at the end of each chapter. In Professor Marx's own words this manual is intended for the young otologist starting in practice ("angehender Ohrenarzt"), and it may be confidently recommended as a reliable textbook. The German style is easy to read.

INTRACRANIAL TUMOURS

Tumeurs Intracraniennes. Étude Analytique de 2.000 Tumeurs Vérifiées et de leur Mortalité Opératoire. By Harvey Cushing. (Pp. 194; 111 figures; tables. 80 frs.) Paris: Masson et Cie. 1937.

The French translation of Dr. Harvey Cushing's book on *Intracranial Tumours*, which appeared in 1932, has been enlarged by two studies on the late results of operation for cerebral tumours, one by Dr. van Wagenen and the other by Professor Hugh Cairns. These statistical studies show a surprisingly long period not only of survival but also of useful life in many forms of intracranial tumour. Van Wagenen gives an average period of working life of a year or more in all forms of intracranial tumour except medulloblastomas, glioblastomas, and metastatic cancers. In Cairns's statistics it is surprising to note that individual cases of cerebral glioma, pituitary adenoma, and tumour of the acoustic nerve have survived for twenty-five years after operation. While the average survival period is much less for cases in which the tumour cannot be completely removed, the results obtained justify the unique position which Dr. Harvey Cushing's clinic held in neurosurgery and the faith in the future of his specialty which has sustained him throughout his career.

The French edition also contains a short chapter on basophil adenomas of the hypophysis, a form of tumour which was scarcely recognized at the date of the American edition, and on which the author has since contributed valuable knowledge. Owing no doubt to difference in the paper used, the illustrations appear to be clearer and more brilliant than in the original edition.

HAEMATOLOGY

A Textbook of Haematology. By William Magner, M.D., D.P.H. (Pp. 395; 23 figures; 3 coloured plates; 3 charts. 18s.) London: J. and A. Churchill. 1938.

It seems that every professor of pathology is expected to publish his own book of haematology for the special use of his large class of students; the result is a superfluity of haematological textbooks overlapping each other, for of late the format of these books has become generalized and stereotyped, and choice is only narrowly limited. It is noticeable that with the increasing number of books the professors have become more cautious of their opinions. Professor Magner introduces several controversial questions, such as the development of red and white cells, the origin of platelets, etc., and states the

views of several authors for and against some particular theory but refrains from expressing his own personal views of these questions. It would be useful to know which special form of haemoglobinometer he favours, also on which haemocytometer chamber and methods he relies for the enumeration of cells. He makes no mention of "Price Jones" mean diameter distribution curves for determining the size of red cells and the degree of anisocytosis, which is so essential for the correct diagnosis of anaemias and is in common use in this country.

Owing to the employment of surfaced paper the weight of the volume is unduly great, but the reader is recompensed by the excellence of the coloured plates. It is a pity the photomicrographs are not sharp and do not convey very much. It may be a mistake to include in a book of this character the clinical and therapeutic aspects of the anaemias described; but this is a common habit, and Professor Magner is in good company.

Notes on Books

The Psychology of Early Growth: including Norms of Infant Behavior and a Method of Genetic Analysis, by ARNOLD GESELL, M.D., and HELEN THOMPSON, Ph.D., is published by the Macmillan Company at 17s. This important book of reference comprises a summary of the work of Professor Gesell and his colleagues at Yale University on the mental development and behaviour of infants. Thanks to this work we are beginning to obtain a very fair idea of what the normal infant can do at various ages and how far deviations from the normal are to be regarded as non-pathological. It is only by establishing this norm that we can study abnormalities with intelligence and discover what conditions in infancy may be recoverable and what must be regarded as inevitably permanent handicaps. The medical man who is concerned with the diagnosis and prognosis of injuries and developmental defects in infancy will find a wealth of material in this volume which will serve him in very good stead in controlling his own observations.

Der Schwachsinn, by F. DUBITSCHER (Leipzig, Georg Thieme), is the first of a series of volumes edited by Arthur Guett, director of the Health Department in the Reich and Prussian Home Ministry, under the general heading *Handbook of Hereditary Diseases*. The first part of the volume deals with mental defects (classification, aetiology, normal personality, physical symptoms of feeble-mindedness, mental symptoms, general pathological-anatomical and pathological-histological findings, special kinds of feeble-mindedness, ethical deficiency, diagnosis, social importance of feeble-mindedness, measures against feeble-mindedness, legal aspects). The second part is devoted to intelligence tests. The main tasks of the health administration in the fight against feeble-mindedness appear to be: to determine biological psychic unities and to study the heredity of these single characters; to identify diseases, related to feeble-mindedness, belonging to the oligophrenia group in the sense of Weygandt; to study the connexion of social conditions and feeble-mindedness; to examine systematically all the children who leave special school classes for feeble-minded children or who leave school prematurely. Will it be possible to eliminate feeble-mindedness by legal measures based on considerations of heredity? Certainly not. But the problem is not "When will feeble-mindedness have ceased to exist?" but "How much would feeble-mindedness spread in a certain period without such legal measures?"

In the *Annales d'E. Merck* for 1938 (first part) there is an article by Dr. Albert von Szent-Györgyi on "New Perspectives in Vitamin Therapeutics."

Preparations and Appliances

ELECTRICALLY HEATED COT

Dr. WILLIAM MORE (Stockport) writes: The problem of maintaining the body temperature is one of the chief difficulties in the management of premature infants. Warmth is usually maintained by hot-water bottles wrapped in blankets, by electric blankets, or by some form of incubator. Enclosed incubators in which the air is stagnant are not advisable; an electrically heated cot in which there is a gentle current of warm air is preferable. In the incubator described below there is no thermostat, but the temperature can be maintained

FIG. 1

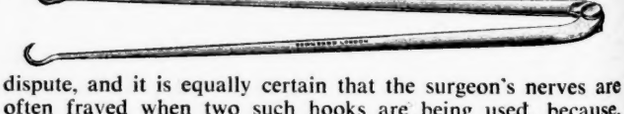
FIG. 2

at a level between 70° and 80° F. The details of its construction are as follows: The cot is made of angle-iron, electrically welded and covered with 17 s. gauge gauze on the outside and 22 s. gauge gauze on the inside. A space is left between the inner and outer walls, the space being heated by six 16 c.p. carbon-filament lamps, controlled by three switches, as seen in Fig. 1. Each switch controls two lamps. A glass pane is inserted in one end of the cot so that it can be ascertained which lamps are in use (Fig. 2). All the wiring is asbestos-covered and an efficient earth is provided. The number of lamps used to attain the required temperature will vary with the room temperature, but once the desired temperature has been reached this remains at a constant level. However, if the room temperature varies a great deal occasional adjustment of the switches on the cot will be necessary. Three of these cots have been used with success in Stepping Hill Hospital during the past two years. I am indebted to Mr. Shawcross, the hospital engineer, for his skill in constructing them.

A SKIN RETRACTOR FOR PLASTIC SURGERY

Mr. GRAHAM HUMBY (London, W.) writes:

It is with deference that this retractor is offered, because it is only of use to those who are interested in plastic surgery, and it is apparent that their numbers are limited. The utility of fine hooks for skin retraction in this work is beyond



dispute, and it is equally certain that the surgeon's nerves are often frayed when two such hooks are being used, because, unfortunately, telepathic control of an assistant's hands is an ideal rather than a reality. It is for this reason that two hooks have been joined together at their proximal ends, thus eliminating a separate hook and a separate tremor. The retractor can be used as a single hook when the two arms are approximated, or as a double hook by inserting a finger in the acute angle formed by the arms, the number of fingers inserted determining the distance and the tautness of the skin between the two hooks. This instrument was made for me by Messrs. Down Bros.

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THE PRESIDENTIAL ADDRESS

Successive Presidents of the British Medical Association have, of recent years, devoted a considerable portion of the presidential address to a consideration of the public relations of the profession and to a discussion of its future development and organization in view of the needs of the community. Dr. Colin Lindsay at Plymouth gave his address the simple title "The Profession and the Public," indicating that the interrelations of these two bodies continue to be the appropriate subject of thought and pronouncement even at the inauguration of a meeting the intent and content of which are predominantly scientific. We print the address in this issue of the *Journal* at p. 163. The new President speaks from an experience of more than forty years as a general practitioner and consulting physician. He emphasizes in particular the pressing need for continued education both for the public and for the practitioner, and the value and wisdom of the policy of the Association in this regard and of its recently revised and re-issued Proposals for a General Medical Service for the Nation. This was both opportune and helpful at the end of a year during which the Council has devoted a great deal of time, care, and attention to the re-presentation of those proposals, to the formulation of its policy on some other very important medico-sociological questions, and to the development of methods by which the work and opinions of the Association can properly be made more widely and accurately known and its influence extended.

It was timely, too, that the President should remind the public of the unity and equality of the three main branches of the profession—the general practitioners, the consultants, and the members of the public health service. They have a common basic training and tradition, each branch provides a specialist service in its own sphere, and "there is no real reason why one branch should be from its nature more eminent that the other. They are essentially complementary, and each requires for its proper performance attainments of the highest order." It is probably true at the present time that, while it is to the family doctor that individual members of the public give their greatest confidence, general practitioners collectively have a less high place in the public regard than the other two branches. Perhaps Dr. Lindsay in his address overemphasizes this, as, indeed, have several recent pronouncements. He goes so far as to say that "there is a tendency for this branch of the profession to sink lower and lower in the estimation both of the public and of the student body from which the profession is recruited." He puts it in this way merely to heighten the contrast between this situation and what the general practitioner really is and the fact that "a reaction from this attitude is inevitable. The more the public is educated and the more the health services extend and intrude themselves into the lives of the people the more will there be required an active and intelligent family doctor service." There are indications that this reaction has already begun. There appears in fact to be less and less dissent from the proposition that any reconstruction of medical organization for the public health must be based upon the work of the general practitioner. As to this future work the President declares that "all direct contact with the public as individuals should be in the first instance through the family doctor. There should be no short-circuiting or duplication of his services"; and in a rather striking phrase he says that the family doctor service will be no "corps of clerks," but a highly trained and skilled body of persons who will ensure the early recognition of diseased states, the application in ordinary cases of those psychotherapeutic methods which are becoming more and more a national need, the proper co-ordination of extending specialist services, and the more effective education of the public in medical and health matters.

In the President's reference, in the passage previously quoted, to the opinion of general practitioners held by the medical students from whom they are to be recruited there is a shrewd touch. It is perhaps intended to convey to the teachers in medical schools a warning that it is both easy and very unwise to create in those schools an atmosphere which is unfavourable or detrimental to the status of the general practitioner. This is not a new thing. It was probably more prevalent thirty or forty years ago than it is to-day, though the effect produced was not, and is not, deliberate or intentional. Three-quarters of the students still pass into general practice, and no effort should be spared to present to them a high ideal of what such practice should be and usually is, and a sense of its paramount importance in the medical field.

The whole Association—and, indeed, the whole profession as well as others—will wish to join in the welcome given to the President at Plymouth, and in the hope that his year of office will be both pleasant and successful.

CANCER OF THE LUNG

"Any disease which throughout a quarter of a century develops from a position of obscurity to one of comparative prominence can scarcely avoid exciting the interest of the inquiring medical mind." This opening sentence forms the justification for Dr. E. J. Simons's monograph[1] on carcinoma of the lung, and affords an opportunity of reviewing here some of the facts and fancies about this condition. Is the increased incidence of bronchial carcinoma fact or fancy? Is it real, or apparent only because of such factors as improved diagnosis? There can be no doubt that methods of diagnosis have improved and that therefore more cases have probably been diagnosed than would have been formerly, but in addition to this Simons believes that the rate of increase in cancer of the lung has accelerated considerably since the early years of the present century. He also finds that in some localities the greatest incidence seems to have been reached in 1924, and that in others it is still on the increase. As with cancer in other parts of the body, the question of aetiology raises many baffling problems. There is little evidence of any hereditary influence, and injury to the chest does not seem to be important, although cases have occasionally been found in which a single severe injury preceded the development of a growth in the lung. In the cancer of the lung of the Schneeberg miners inhaled dust appears to be an undoubted aetiological factor: the dust contains a variety of irritants, including bismuth, nickel, and cobalt, but the balance of evidence incriminates arsenical dust or radioactive substances. Active tuberculosis is present in about 10 per cent. of cases of bronchial carcinoma; this, however, cannot be held to have relevance to the question of causation. Although it has been suggested that there is some connexion between chronic disease of the lung and cancer of the lung, so many different diseases have been suggested, and so few cases have been put forward in support of each individual condition, that the causal relation is by no means clear-cut. The inhalation of dust, tar particles, petrol fumes, and poisonous gases has been blamed, but it is not easy to say where the blame lies, if any. In view of the extent of tobacco smoking it was to be expected that the possible part played by this in the development of cancer of the lung should be subjected to inquisition. From what has already been published it is plain that the innocence of tobacco is by no means clearly established. Further study of this question is needed.

[1] *Primary Carcinoma of the Lung.* By Edwin J. Simons, M.D. Year Book Publishers, Inc., Chicago. London: H. K. Lewis and Co. 21s.

When we come to pathology we are on surer and more familiar ground. The main group of tumours is composed of undifferentiated cells which take their origin in the deeper layers of the bronchial mucous membrane. This membrane is composed of transitional epithelium, with a basal layer of rounded or oval cells and a superficial layer of columnar cells; the whole membrane is derived originally from the primitive hypopharynx, which produces the squamous epithelium of the mouth and oesophagus. From these cells the three common histological types of carcinoma are derived: the "oat-celled" (which is the most primitive), the columnar-celled, and the squamous carcinoma. It is not uncommon to find some mixture of these types in a single tumour. Distribution may occur by the blood stream or by the lymphatics, the cerebral metastases being obviously haematogenous, and the thoracic and abdominal deposits being commonly carried by the lymphatic vessels. The clinical study of bronchial carcinoma shows that it tends to occur most frequently at a rather earlier age than most other cancers, the chief incidence being in the fifth decade, although many cases have been described in quite young patients. A clinical classification is of much help, not only in diagnosis but also when treatment has to be considered. Tuttle and Womack classify bronchiogenic carcinomata according to whether they arise in a major bronchus or in a bronchiole. Rabin and Neuhof group their cases into circumscribed and non-circumscribed forms. Each of these classifications indicates that there is a type of tumour situated in the hilum and close to vital structures, and another, discrete, type which in the earlier stages at least is situated deep in the surface of the lobe. Cough and haemoptysis are likely to be early symptoms when a tumour is related to the main bronchi, whereas the deeply situated growth may cause few or no symptoms until metastases have occurred.

The clinical findings are not usually due to the growth itself but rather to involvement of surrounding structures. It is common to find collapse of a lobe, or of a lung, caused by obstruction of a large bronchus. When the tumour is situated under the pleura the first signs are often those of an effusion. If the diagnosis of bronchial carcinoma is to be made at a stage when treatment can be effectively applied it is necessary to abandon all thought of relying on physical signs, and to attempt to base the diagnosis on the combination of suspicious symptoms and judicious investigation. Any middle-aged patient who has persistent cough, especially with slight haemoptysis, should be subjected to *x*-ray examination without delay. The other investigation which is of particular

importance, and which has been widely employed during the past few years, is bronchoscopy, and this should never be omitted when there is the slightest possibility of malignant disease. Lipiodol examinations are helpful in demonstrating obstruction in the smaller bronchi which are out of reach of the bronchoscope. It is as yet too early to discuss the value of tomography in the diagnosis of malignant disease. The increasing safety of intrathoracic operations has made exploratory thoracotomy a procedure which should be seriously considered in suspicious early cases, for it may be the only means by which a diagnosis can be made. Successful treatment of bronchial carcinoma is still only to be achieved in those comparatively rare cases in which diagnosis is made at a sufficiently early stage to enable the growth to be removed. The usual operation is lobectomy, or even total pneumectomy, and the mortality from the actual operative procedure has been strikingly lowered of recent years, but it still happens only too rarely that the patient maintains freedom from recurrence for an appreciable length of time. It has lately been recognized that there is a small group of cases in which a tumour of relatively low malignancy projects into the bronchus, and this type can sometimes be successfully removed through a bronchoscope. The value of radiotherapy is still a subject for discussion, but it appears to be definite that *x*-ray treatment has not yet cured a proven case of bronchial carcinoma. There is little reason to doubt that the duration of life has been prolonged in a considerable number of cases by the use of deep *x* rays, and that the results are steadily, if slowly, improving.

THE TRIAL OF MR. BOURNE

On Monday and Tuesday of this week Mr. Aleck Bourne, obstetric surgeon to St. Mary's Hospital and consulting obstetric surgeon to Queen Charlotte's, stood his trial at the Central Criminal Court on a charge of unlawfully using an instrument with intent to procure the miscarriage of a girl. The girl had become pregnant after being raped. Mr. Aleck Bourne's acquittal, after a hearing which was in accordance with the highest traditions of British justice, expresses the jury's view of his motive and his action—a view which will be endorsed by an overwhelming majority of their fellow-citizens. It was courageous and public-spirited of him to invite prosecution in order to get the law declared on a matter of great importance to the public and more especially to the medical profession. His claim, cogently stated by Mr. Roland Oliver, K.C., was, "What I have done is lawful, right, and honest, and I have committed no offence at all." The case for the Crown, put forward with moderation and respect by the Attorney-General, was that what he did was contrary to the law. Mr. Justice Macnaghten in his summing-up emphasized the point that the case did not touch that of the professional abortionist. "So far as the members of the medical profession themselves are concerned, they alone are the persons who could properly perform such an operation. It is to be hoped and expected that none of them would ever lend themselves to the malpractices of the professional abortionist. No doubt they would act only in consultation with some other member of the profession of high standing, so as to confirm the view that the circumstances were such that an operation had to be performed and was legal." The jury, having had the law expounded to them, brought in a verdict of "Not guilty." Thus Mr. Aleck Bourne has obtained the court ruling he sought and has earned the applause of his colleagues. A report of the trial appears at page 199, but the medico-legal aspects of the case must be reserved for future discussion.

INCOMPLETE DESCENT OF THE TESTICLE

A truly undescended testicle is an extreme rarity, but the diagnosis of undescended testicle covers a multitude of degrees of incomplete descent, an amended classification of which is suggested by Mr. Denis Browne in his thoughtful and stimulating article on page 168 of this issue. A further terminological complication in the literature of this difficult subject is that in this country the phrase "ectopia testis" is meant to describe a position of the testis other than in the normal line of its descent. In Continental writings the term is applied, perhaps more logically, to any position of the testicle other than its normal one, so that it usually includes cases of incomplete descent. Mr. Browne tilts at the custom of describing as undescended any testis that is not in the position which would be normal for an adult, and he would have "any position in childhood from which the testicle will invariably reach the scrotum" classed as normal. It may be urged that since it is normal for male children to be born with the testicles in the bottom of the scrotum, any departure from that rule is abnormal and should not be classed as normal merely because in time the abnormality will right itself. It may be doubted, too, whether most surgeons have enough prophetic insight to enable them to say that any given incompletely descended testicle will be certain to reach the scrotum spontaneously. Mr. Denis Browne may well be right in not taking very seriously "those long lists of cases in which testicles, described as being before treatment in the inguinal canal, have descended into the scrotum as a result of pregnyl injections"; yet it is difficult to agree that "a testis that is in the inguinal canal cannot be felt through the skin" because "it is a soft, elongated, wormlike object; sunk in the soft

floor of the canal, shielded from touch by the tense tendon of the external oblique." The tendon of the external oblique is not always tense, and it allows an inguinal hernia—which one might similarly describe as a soft, elongated, wormlike object—to be felt. It seems more reasonable clinically to classify non-scrotal testicles as (1) those that can be felt—which may be but are probably not in the inguinal canal—and (2) those that cannot be felt, which may be anywhere. Mr. Denis Browne lays valuable emphasis on the varieties of mobile testicle, in which, because of cremasteric spasm acting on a small gland, the testis, though sometimes lying in or near its normal position, is at other times much higher. A large measure of agreement must be accorded to his belief that "this class supplies the greater number of the successes of pregnyl treatment." Again, in considering cases with mechanical obstruction, he stresses "the fact, still being confirmed, that cases of unilateral undescended testis average much poorer results with hormone treatment than bilateral ones," and most justifiably observes that "if one testis had descended normally it might be assumed that whatever was keeping up the other it could not be lack of hormones." Apart from the fact that incomplete descent of the testicle is usually a unilateral condition, another objection to the present wave of indiscriminate hormonic enthusiasm at which he hints is the accompanying risk of premature sexual stimulation. If the volcano is activated too early may it not become prematurely extinct?

CHEMICAL ASPECTS OF ANTIGENS AND ANTIBODIES

In order to record the rapid advances that have been made in the field of immunochemistry the Medical Research Council has issued a revised edition of Professor Marrack's report on the chemistry of antigens and antibodies.[1] That a second edition should be called for within such a short space of time speaks much for the usefulness of this concise and lucid account of the chemistry of antigens and antibodies and for the success that has been achieved in explaining certain immunity reactions in terms of the fundamental sciences. The division of the report into five chapters has been retained, but the new edition has been extensively revised. An account of the work of Svedberg and his school on the determination of the molecular weights of different proteins has been included, together with a fuller survey of the bacterial polysaccharides and a critical discussion on the relationship that has been shown to exist between chemical constitution and immunological specificity. A more detailed explanation of serological cross-reactions in terms of chemical and physical structure and the important work of Heidelberger and Kendall are treated at some length by Professor Marrack and add much to the value of the report. Within the last few years Heidelberger and Kendall have considerably advanced our knowledge of antigen-antibody reaction by developing a theoretical treatment of the combination which appears to be in general agreement with the results of a large number of carefully planned quantitative experiments. It is unfortunate that Professor Marrack did not include in the new edition an account of the recent work on the nature of bacterial antigens. This work has developed rapidly during the last five years, and to-day it seems an established fact that the specific antigens of certain of the Gram-negative organisms at least are non-protein in nature. Until recently it seemed probable that bacterial antigens were composed of a polysaccharide substance, with which the immunological specificity of the antigen was closely associated, combined with bacterial protein which endowed the complex with antigenic properties. The demonstration of the non-protein nature of some bacterial antigens again brings forward the question why certain complexes should possess antigenic properties. Large molecular size appears to be an essential characteristic of antigenic molecules, but not all large molecular complexes are antigenic. It seems probable that a detailed study of the chemical and physical properties of these protein-free antigens will contribute a good deal towards our understanding of the properties essential for antigenicity. Workers in the field of immunochemistry and others interested in this subject are much indebted to Professor Marrack for preparing for them this reliable and up-to-date account of the chemical aspects of immunity reactions.

[1] *The Chemistry of Antigens and Antibodies.* By J. R. Marrack. Medical Research Council Special Report No. 230. H.M. Stationery Office. 1938. (3s. net.)

THE BOOK OF PLYMOUTH

It might be said that Plymouth needs no book, for it is in itself a complete volume on the shelf of English history. A statue of Drake stands on the Hoe to remind the passer-by of all that the sea has meant to England and of the greatness that has been built upon the audacity and courage of her sea captains. From Plymouth Sound Sir Walter Raleigh and Sir John Hawkins sailed on their adventures—not all to end well. And Plymouth has high responsibility to history because from here in 1620 the *Mayflower* sailed with the Pilgrim Fathers. These things and others are set down in print in the *Book of Plymouth,* so ably edited by Mr. F. A. Mayne, who wisely has not allowed the title to impose too strict and narrow limits on what is included in 248 pages of a book of exceptional interest. He points out in some introductory remarks that both Devon and Cornwall are represented in the preparations of the 106th Annual Meeting of the B.M.A.; and that therefore "no part of these counties" has been omitted in the accounts given by various experts on various aspects of the West Country. The first part of the book is on Plymouth itself and the second on Cornwall and Devon. The historical notes on the former by Mr. C. W. Bracken are full of interest and instruction, and give the reader a clear picture of Plymouth's historical meaning. Chapters follow on the medical history of Plymouth by Mr. J. Elliott Square, on vital statistics and municipal hygiene by Dr. Mildred A. Thynne, and on the water supply of the town by Mr. Alan Atkinson. In the second part of the book—on the two counties—special attention may be drawn to the well-illustrated chapter, "Before Written Record," by Mr. R. Hansford

Worth, who learnedly discusses geological formations and their relation to human skeletons found in certain caves. On the other side of the River Tamar medicine, says Mrs. Charles Henderson in her chapter on Cornwall, has not always been held in great respect, and the spirit of Molière seems to have dwelt in the writer of the fifteenth century verse play of the Life of St. Meriasek; in this the doctor confides to his dispenser that

> "If falsehood helps not,
> A physician will never rise."

The same standard of excellence and interest is maintained in the other chapters, and we would finally refer to the pictorial maps of Devon and Cornwall by Colonel M. Orr Wilson, which form the end-papers of the volume, and to the delightful photograph of Dr. Colin D. Lindsay, the President.

THE BIRMINGHAM MEDICAL SCHOOL

The opening of the Hospitals Centre at Birmingham, which was the subject of an article in our last issue, is the occasion for the publication of a booklet by the Faculty of Medicine giving a short history of the Birmingham School and an account of its new buildings and environment. Systematic clinical instruction of medical students in Birmingham goes back to the opening of the General Hospital more than 150 years ago. The foundation of the School of Medicine proper was the work of William Sands Cox, the son of a Birmingham surgeon, who qualified in 1824, and in the following year began a course of "Anatomical Lectures with Physiological and Surgical Observations" with a class of nineteen students. The school was astonishingly successful. By 1835 it had ninety students and a panel of lecturers, and in 1836 William IV became its patron and decreed that its style should be the Birmingham Royal School of Medicine and Surgery. Afterwards Queen's Hospital was established as an institution primarily for the teaching of students, and when Queen Victoria granted a charter to the school in 1843 it became known as Queen's College. In 1851 a rival school, Sydenham College, was founded in association with the General Hospital, and was administered by local practitioners. Presently steps were taken to amalgamate the two schools. This was successfully accomplished, and the Birmingham Clinical Board was founded to co-ordinate the clinical teaching at the two hospitals—that is, the General and Queen's. The school owes a great deal to Joseph Mason, one of the self-made men of Birmingham, at whose college the students of Queen's took their preliminary science training. In 1892, when there were upwards of 250 medical students, the Medical Faculty of Queen's became the Medical Faculty of Mason's College. The booklet goes on to describe the advent of the Hospitals Centre Scheme and the planning of the new school buildings, which are an integral part of the enterprise. A remark is made on the apparent anomaly that there is no provision for the teaching of medicine and surgery in the school itself; this is deliberate, the Faculty of Medicine believing that these subjects should be taught in the hospital. It is proposed as soon as the school is in working order at Edgbaston to set up three research departments—namely, in industrial hygiene, cancer, and mental diseases. The school is provided with a large department for dentistry, and all dental instruction, including that which has up to now been given at the Dental Hospital, will in future be given in the new buildings. The number of medical students taken each year will only be sixty-six, a slight increase on the present entry limit of sixty, but facilities will be available for the admission of a certain number of students in excess of that figure when they have finished their pre-clinical studies elsewhere—for instance, at Oxford or Cambridge—and wish to take up clinical work in Birmingham. It is also proposed at a later date to make arrangements for postgraduate study, seeing that the clinical material available in the city and surrounding areas is exceptional both in its size and range. When the new hospital has its full complement of beds (740) one of the other general hospitals in the city will probably be reserved for postgraduate study. The booklet is an interesting souvenir, ably written, and includes an aerial photograph of the new buildings and site.

ELECTROCARDIOGRAPHIC CHANGES DUE TO SMOKING

The advice he receives on smoking is to the patient with heart disease a most important aspect of his treatment, since very often he has been a heavy smoker and finds drastic reduction hard to carry out. It is generally agreed, however, that smoking is apt to increase blood pressure and the frequency of the heart beat, and causes a dry cough, all of which are better avoided in cardiac disease. The patient is therefore usually advised not to smoke at all, or at most a little after meals—a restriction which he finds difficult to follow, as the habit is usually ingrained and pleasurable. More precise observations of the effect of tobacco-smoking on the heart are supplied by A. Graybiel, R. S. Starr, and P. D. White,[1] who have investigated the electrocardiographic changes in forty-five subjects, four of them being non-smokers and the majority tobacco addicts; eleven had heart disease. After a control electrocardiogram and other records had been taken the smoke from a cigarette was inhaled until toxic symptoms appeared or it was finished. In some cases two or three cigarettes, a pipe, or cigar were smoked. During the test twenty-eight complained of symptoms—cerebral, cardiac, or gastro-intestinal. The electrocardiogram showed changes, apart from those of rate, in twenty of the forty-five subjects, seventeen being heavy smokers and three moderate or non-smokers. The commonest change was a decrease in the amplitude of the T wave in Leads I and II, and in one instance T_2 became negative or diphasic; flattening of the previously well-developed positive T wave was not infrequent. In a few cases atropine sulphate (2 mg. intravenously) was also tried, and the effects on the tracing were found to be very similar to those of smoking. Discussing the way these changes are brought about Graybiel and his colleagues

[1] *Amer. Heart J.*, 1938, **15**, 89.

state that only three toxic substances need be considered—pyridine bases, carbon monoxide, and nicotine. They believe that neither carbon monoxide nor pyridine bases are usually absorbed in amounts capable of inducing the changes recorded, and hold nicotine responsible for them all. Some of the effects—for example, the increase in pulse frequency and in blood pressure, which occurred in the majority—may be attributed to stimulation of the sympathetic nervous system; but there is less evidence that the changes in the T wave were brought about in this way, though it was noted that they were conspicuous in the young and healthy but emotionally labile subject and absent in the more stolid, even with severe coronary disease. Amyl nitrite was without effect on the altered wave, and the authors do not regard the changes in the T wave indicative of coronary vasoconstriction. They believe that any aggravation of angina pectoris caused by smoking is due not to an action on the coronary arteries but to the well-known action of nicotine on the frequency of the heart and on the blood pressure, which are usually both increased.

HARVEY CUSHING

We welcome to this country Dr. Harvey Cushing, emeritus professor of surgery, Harvard University, and congratulate him on the honorary degree of Doctor of Science which was conferred on Saturday by the University of Oxford. Dr. Cushing has many ties with this country, for in his early days he worked in several laboratories of physiology here. During the war he came in contact with many surgeons of the British Army. In the course of his long tenure of the professorship of surgery at Harvard he built up his world-wide reputation as a peerless operator on the central nervous system, and inculcated his methods into men from all over the world. Eminent not only in surgery, he has distinguished himself also in the field of letters, and his biography of Sir William Osler will remain a monument to his literary style and his appreciation of the spirit and achievement of a great man. It is only right that the biographer of the late Regius Professor of Medicine at Oxford should be honoured by the University which Osler graced during the latter part of his life. Those who have worked with or been acquainted with the "Chief" have always been impressed with Dr. Cushing's surgical skill and his knowledge of literature, and, more particularly, with his wisdom and understanding of patients in his care. He has not only a genius for making friends but that greater genius of being able to keep them.

SUCCESSFUL VACCINATION WITH DEAD TUBERCLE BACILLI

Some unusually successful results from vaccinating guinea-pigs with dead tubercle bacilli have been obtained by G. Hensel.[1] Twenty-one animals were inoculated, presumably subcutaneously, with 0.005 gramme of tubercle bacilli suspended in 1 c.cm. of lanolin or soft paraffin. The organisms had been killed by exposure for two hours to a temperature of 65° C. Ten to eighteen months later, when still tuberculin-positive, the animals were injected intracutaneously into the hind leg with 0.00001 mg. of living tubercle bacilli from a four-weeks-old culture. Ten control animals received the same infecting dose simultaneously. Cultures put up from the inoculum showed that living tubercle bacilli were present. Three months later all the animals were killed. In the control group the focal glands were enlarged and partly caseous, and in nine out of the ten animals the spleen was obviously tuberculous. In the vaccinated group, with one exception, not a single animal showed any lesions in either the glands or the spleen. Examination of the vaccination site showed the presence of a capsulated lesion containing apparently unaltered vaccine material with intact acid-fast bacilli. Only in the animal showing tuberculosis had the lesion developed into an abscess and discharged part of the vaccine material. The reasons for the extraordinarily successful result of this experiment are discussed. The author lays stress on the long period of allergy—ten to eighteen months—elapsing before infection, on the smallness of the infecting dose used, and on the choice of the intracutaneous route for infection, which ensured that the living bacilli gained access to the tissues slowly.

[1] *Beitr. klin. Tuberk.*, 1938, **91**, 442.

NATIONAL RADIUM TRUST

The National Radium Trust met on July 12 at the Privy Council Office, with Viscount Hailsham, Lord President of the Council, in the chair. The Earl of Donoughmore was reappointed for a further period as chairman of the Radium Commission (the expert body set up under the Charter which allocates the Trust's radium and supervises it in use). Various matters were reviewed affecting the supply of radium to the Trust. The Trust, £150,000 of whose funds was contributed by public subscription in 1929 as a thank-offering for the recovery of his late Majesty King George V, welcomes gifts and bequests of all kinds in furtherance of its objects, including trusts subject to special conditions, which it is expressly authorized to accept under the Royal Charter granted by King George V in 1929. Its headquarters are at the New Public Offices, Whitehall, S.W.1.

THE HALF-YEARLY INDEXES

The usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been printed; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who wishes to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Finance Department, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this.

At the quarterly meeting of the Council of the Royal College of Surgeons of England, held on July 14, Mr. Hugh Lett, F.R.C.S., consulting surgeon to the London Hospital, was elected President for the ensuing year.

SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

INJURIES TO THE ELBOW-JOINT

BY

S. L. HIGGS, F.R.C.S.

TENNIS ELBOW

Much has been written but little is known with certainty about this common minor ailment. It is an annoying condition, not only to the patient but also to the doctor, as treatment so often fails to effect a cure, with consequent dissatisfaction to all concerned.

Diagnosis

The condition may sometimes be mistaken for arthritis of the elbow or some other painful disorder; but the diagnosis may be made in a few moments, as the signs and symptoms are definite and vary but little. The patient complains of pain at the outer side of the elbow and sometimes down the forearm on gripping with the fingers, as in shaking hands or opening a door, and on such movements as lifting quite small objects—a teapot or even a tumbler. Tennis and other games requiring a firm grip become impossible.

On examination the appearance of the arm is quite normal. The elbow should be moved passively, with the muscles relaxed. No pain or stiffness is experienced, so that the joint itself is thereby excluded as the site of the trouble. On active extension of the wrist against resistance, especially if this movement is combined with supination, the typical pain occurs. If this active extension is maintained the site of the pain can be localized. There are three usual situations, all of them beneath the common origin of the extensor-supinator group of muscles. The first and most usual is over the radio-humeral joint; the second, rather higher up, in the region of the external epicondyle; and the third, and least frequent, rather more forward beneath the bulky part of the muscle origin. The moment the active contraction is relaxed the pain disappears. An exactly analogous condition is very occasionally found on the inner side of the elbow just below the tip of the internal epicondyle at the origin of the flexor-pronator group of muscles.

The condition is rarely seen in patients under 35. The trouble is provoked by vigorous use of the arm, as in playing tennis, fly-fishing, and gardening. Although sometimes seen in industrial workers, it is the occasional overuse, as in games, rather than regular activity which seems to determine an attack. There is often a history of "rheumatism," lumbago, sciatica, and so on, suggesting that an infective factor may be at work. Frequently the history is given of a tennis elbow lasting two or even three years, but rarely longer. The trouble seems to run a certain course and then to disappear spontaneously.

These observations seem to throw some light on the nature of the disorder and to indicate the line of treatment. When the elasticity of youth has passed, and at an age when focal sepsis is common, unaccustomed vigorous use of the forearm muscles may lead to trauma to their deep fibres of origin. Instead of clearing up in the manner of an ordinary strain the painful symptoms persist, owing, it may be supposed, to a low-grade infective process becoming established in the damaged tissues. In a case explored by operation eight weeks after the onset of the trouble a patch of granulation tissue was discovered—an observation which lends support to this theory.

In course of time the active stage of inflammation passes into one of fibrosis and adhesions, and ultimately the lesion heals and symptoms disappear. In these later stages a chronic inflammatory area resembling wash-leather may be discovered at operation.

Treatment

The multitude of methods that have been advocated only indicate the uncertainty of the results. Many patients are seen who have already tried a number of remedies—massage, "bone-setting," and the like—and are disappointed at their lack of success. Some account of the nature of the trouble should therefore be given and its chronic character and ultimate spontaneous disappearance explained. The advice, however, will depend chiefly on the duration of the trouble when the patient is first seen.

At the onset, or if it has been present for a few weeks only, it is sometimes possible to cut short the attack by rest, heat, and avoidance of the painful movements. The arm should be kept in a sling and heat applied by antiphlogistine at night. In addition diathermy may be given. The elbow-joint should, of course, be moved through its full range each day to prevent stiffness, but the forearm muscles must be kept out of action. Focal sepsis should be sought and an *x*-ray examination of any crowned, dead, or suspicious-looking teeth carried out and apical infection dealt with if discovered. Massage, movements, and electrical stimulation appear to make matters worse rather than better, and should be avoided. Most patients do not seek advice at the early stage, but only when the condition has been present for some months.

In the early chronic stage, which may last a year or more, treatment is most difficult. This is rather to be expected if we believe that a localized chronic inflammatory process is at work. During this period there is no actual contracture of the affected muscles, and this would explain the frequent lack of success of rapid manipulative methods. It should be pointed out that a very certain cure within a short space of time can be effected by means of an operation. The majority, however, will not welcome this suggestion, as they regard a tennis elbow as a minor nuisance not worthy of such drastic treatment. Nevertheless there are some who find a disabled arm such a hindrance to sport or work that they will agree to operative measures, especially when other means have failed, and for them a speedy cure is assured.

The Operation

The whole arm is given the usual thorough preparation. Then, to render the operation field bloodless, an Esmarch bandage is bound round from the hand upwards and finally made fast by a few turns about the middle of the upper arm. The lower part of the bandage is then unwound and the elbow held in mid-flexion with its inner side resting on a sandbag. In no circumstances

may the rubber bandage be kept on for more than half an hour, but far less time than this should be sufficient.

A slightly curved incision four inches long is made on the outer side of the elbow behind the external epicondyle. In this situation the resulting scar is hardly noticeable. The skin is retracted forwards and then the muscles of the extensor-supinator group are reflected from the epicondyle and the capsule of the radio-humeral joint. In some cases definitely pathological tissue is visible beneath the muscles. No special search is made, and since the object is not so much to remove anything but to relieve tension the muscles are stitched back again with a few interrupted No. 0 catgut sutures. It is as well to take off the Esmarch bandage and pick up any bleeding points before sewing up the skin. The arm is kept in a sling until the stitches are removed one week after the operation, and then gradual return to active use is allowed. The arm is usually strong and comfortable once more by the end of a further two weeks.

For the majority of patients other measures must be tried. Success, by operation or otherwise, is achieved by relieving tension at the painful muscle origin, and the method described by Cyriax is giving promising results; treatment can be carried out by a masseuse familiar with the technique. The patient's elbow is flexed to a right angle and fully supinated. Deep friction is then applied to the muscles in front of the external epicondyle over the tender area. This is continued for four or five minutes, after which the elbow is extended in full supination and the forearm adducted forcibly. Some "cracks" may or may not be elicited. The treatment is carried out three times a week, and in a short time relief should be experienced if the method is going to be successful.

In the late chronic stage, where adhesions have formed, a tennis elbow can usually be cured in a dramatic manner by a single manipulation. The suitable case can be detected in the following way. The fingers and wrist are flexed and the forearm pronated. The elbow is then extended. By these means the affected muscle group is put on the stretch. If the range of extension is limited and causes pain at the elbow we may assume that contractures have formed and that the case will respond to forcible stretching. The manipulation (Mills's method) can be done without an anaesthetic, less painfully after an injection of 2 c.cm. of 2 per cent. novocain into the area of maximum tenderness, but best of all under anaesthesia from gas or from an evipan injection. Only a moment's relaxation is required. The muscles are put on the stretch in the manner described. With one hand the operator grasps the flexed fingers and wrist, and with the other the elbow, placing his thumb behind the radio-humeral joint. The elbow is then forcibly extended, and simultaneously the flexion of the hand and pronation of the forearm are increased to the full extent. A "crack" is usually heard and felt in the region of the muscle origin at the elbow. No after-care is necessary, and the patient should be encouraged to resume active use of the arm.

DISLOCATIONS AND SPRAINS

Next to the shoulder-joint the elbow is most frequently dislocated. Unlike the former it occurs more often in children than in adults. It is an injury fraught with serious consequences because of the great damage that inevitably occurs to the ligaments and their periosteal attachments and to the neighbouring muscle insertions. By far the commonest type is the posterior dislocation, due to a fall on the outstretched arm, causing hyperextension at the joint and levering of the coronoid process backwards over the articular surface of the humerus. More rarely the elbow is displaced sideways, either inwards or outwards, but this is usually accompanied by fractures. Anterior dislocation is rare.

The diagnosis is as a rule quite obvious from a consideration of the deformity and position of the bony points. What is not so evident by clinical examination alone is whether or not there is associated bony injury. An *x*-ray examination is therefore most necessary for the purpose of both treatment and prognosis. If, however, *x*-ray apparatus is not available, then to avoid delay and suffering the elbow should be reduced, but radiographs must subsequently be taken. Frequently, in a posterior dislocation, a fracture of the coronoid process or radial head will be revealed, and in a lateral dislocation more serious fractures involving the condyles may be seen.

Treatment

In fresh cases reduction is easy, the ligaments and soft structures being so torn that little resistance is offered except by the bony contours. It is more satisfactory in every way for the reduction to be carried out under a general anaesthetic, affording good relaxation and ample time. In a posterior dislocation the coronoid process of the ulna, which has slipped back beneath the lower end of the humerus, must be made to retrace its path. An assistant steadies the upper arm, and the forearm is grasped and pulled firmly but gently in the line of the limb. If the dislocation is of several days' duration, or difficult to reduce, then hyperextension will lever the coronoid process over the humeral surface and the joint will be felt to slip back into place. The arm is then put up in fairly full flexion, but as the swelling may give rise to pressure symptoms this must not be overdone or forced. A period of rest in the flexed position is most necessary, not only to allow the swelling to subside, but also to prevent recurrence of the displacement to save the torn ligaments from further trauma during the first stage of repair. A sling, with early movement, is not a wise line of treatment. It is better to immobilize the elbow in a moulded plaster. A four-inch or six-inch plaster bandage, depending upon the size of the arm, is immersed in water and, keeping it wet, a "slab" of the requisite length from upper arm to wrist is prepared. It is then put on straight over the skin to the back of the upper arm, elbow, and forearm, and as it sets it is fixed in position by a lightly applied domette bandage. This should leave the elbow region free in front, in order to prevent pressure and provide for inspection of any swelling. The whole is supported by a sling. In uncomplicated cases this splint should be retained for a fortnight and then replaced by a collar-and-cuff sling for a few days until the elbow gains the position of a right angle. This is followed by an ordinary sling for at least a further week.

The complications to be feared are the formation of new bone around the joint at the site of the torn-up periosteum, ossification in the ligaments, and myositis ossificans in the tendon of the brachialis anticus. The danger of these may be reduced but not eliminated by careful treatment, and therefore when the case is first undertaken it is advisable to inform those concerned of these possibilities and to record them in writing.

During the period when a sling is worn, and also later when it has been discarded, restoration of movement should be left to the patient's own efforts. Massage,

stretching, and forcible measures of any kind must be absolutely forbidden, as such misguided attempts, instead of hastening matters, may only lead to further trauma and increased stiffness and even to periarticular ossification that would otherwise not have taken place. Return to normal movement is usually slow, but no anxiety need be felt provided that the range steadily improves. Should this become stationary or the stiffness increase, then an *x*-ray examination must be made to determine whether ossification is occurring in the neighbourhood of the joint.

Treatment of Complications

The radiographs may show a shadow above the coronoid process of the ulna, indicating the onset of myositis ossificans in the brachialis anticus muscle. Complete fixation of the joint for a long period is essential. This is best carried out by applying a wet plaster slab direct to the back of the arm with the elbow flexed to a right angle, the plaster being held in place by an evenly applied bandage. Finally a few turns of a plaster bandage surround the whole. In this way immobilization is assured, with maximum strength and minimum weight of plaster. The hand is left free and can be used. At intervals of one month fresh radiographs are taken after removal of the plaster case in order to observe progress. The extent of the ossification continues for a time, reaches a maximum, and then begins to wane. It may be six months or more before the condition becomes stationary, and during the whole of this time the plaster fixation must be continued. Absorption of the new bone is rarely complete. Usually a branch-like growth of well-defined bone persists. The elbow is given its freedom, but no treatment is desirable. With time and active use a certain range of movement will return. In most cases this range is adequate but not complete. If, however, the limitation is serious even after a full six months of activity, and it is clear that the bony growth has formed a block, then this should be removed by operation. Too early surgical intervention will only lead to recurrence of the ossification, so patience and careful judgment based on the *x*-ray findings are necessary.

Ossification in the ligaments, or bony spurs at the periosteal attachments, also require rest and avoidance of any form of irritation by massage or by passive movements. Complete immobilization in plaster is not necessary, but a sling should be worn for a month or more until there is radiographical evidence that the new bone formation has ceased.

Treatment of Old Dislocations

Although reduction of a dislocation is very easily accomplished soon after the injury, with every day's delay it becomes more difficult. In these old unreduced cases another method must be employed, as forcible stretching with the elbow in extension may not only fail to effect reduction but may also cause further injury to the soft tissues. To obtain the necessary purchase the upper arm is attached by means of a loop of broad firm bandage to a radiator or to some fixed point on the wall. Strong traction is then applied to the fingers and thumb with the elbow bent at a right angle. It is difficult, however, to get the necessary grip, and Böhler's method of applying the pull through gauze stuck to the patient's fingers and thumb with "mastisol" is most valuable. By these means steady force can be applied and the coronoid process of the ulna made to retrace its path beneath the lower end of the humerus. The after-treatment by a period of fixation followed by increasing activity is the same.

Reduction by open operation is rarely either necessary or satisfactory, as it entails so much soft-part injury and subsequent stiffness.

Sprains

A "sprained" elbow should not be regarded so lightly as a similar injury to other joints. An *x*-ray examination is advisable, since the general swelling and stiffness may conceal a fracture of the head of the radius or other bony damage, neglect of which may lead to serious consequences. Strapping, active use, and physical treatment may suffice for other sprains, but in the case of the elbow rest and an unhurried and unaided return to activity is the right policy. It cannot be too strongly emphasized that stiffness must not be treated by manipulation, massage, or forcible stretching.

LONDON FEVER HOSPITAL

OPENING OF THE NEW BLOCK

H.R.H. the Duke of Kent on July 14 opened a new isolation block, which has been added at a cost of £30,000, to the London Fever Hospital in Islington. This replaces an older building which was in its time considered the most up-to-date isolation block in the world.

The New Isolation Block

The new building, different from the old in almost every respect, is the result of many years' experience of fever hospital administration. It is a three-story structure, with twenty-three beds, so designed that each patient is isolated, and it will act principally as a clearing house for incoming patients whose symptoms have not been clearly defined. Doubtful cases will be observed until they can be placed in their appropriate category, when they will be transferred to the corresponding ward. There may also be patients with more than one disease who will need single-room accommodation.

Each of the three floors of the block has a wide veranda in front, continuing around both ends of the building and forming a service corridor behind; thus there are no closed spaces which in old-fashioned buildings were responsible for a certain amount of room-to-room infection. Except for the top floor, with its two four-bedded wards, each floor is of the same design, arranged in single rooms. The rooms are separated by glass partitions, which give the nurse a view of the whole length of the floor from the central kitchen, though curtains afford privacy when necessary for adult patients. A portable bath sink enables each patient to have a bath in his own room. Each patient has his own thermometer, torch, spatula, basin, treatment tray, and doctor's, nurse's, and visitors' gowns. The washing and sterilizing plant in the central kitchen is cast in one piece of stainless steel. The crockery is washed in one sink, and after rinsing transferred in specially designed racks, to be sterilized in a steam-jacketed tank. There are many such interesting contrivances and safeguards in this modern building.

History of the Hospital

The London Fever Hospital was the first voluntary fever hospital in this country, and is still the only one of its kind in the London area. It was formed as a result of the deplorable social and hygienic conditions which existed in London 140 years ago. Like many other movements of the time it originated in a tavern—the Thatched House Tavern—where a meeting of citizens was held in 1802 to institute means of dealing with the contagious diseases then so prevalent. Its original home was in Gray's Inn Lane, after which it moved to a site now occupied by King's Cross station. It has been on its present site in Islington for

nearly ninety years. During the first half of the nineteenth century the hospital was closely associated with the pioneer work of those men and women who fought to awaken the country to the appalling housing and sanitary conditions then existing. Southward Smith, one of the leaders in the agitation which led to the passing of the first Public Health Act in 1848, was a physician of the hospital. Among the friends of the hospital who brought it into public notice were William Wilberforce, Florence Nightingale, and Charles Dickens; the last-named in 1861 wrote a vivid account of the hospital in *All the Year Round*. It was as the result of a series of confirmatory tests and observations at this hospital that Edward Jenner's discovery that vaccination with vaccinia lymph was a protection against small-pox was finally accepted by the medical profession; it was here also that Sir William Jenner, working at a table which is still preserved, established the clinical differentiation of typhus from typhoid fever.

The hospital receives patients from all parts of the country, and its local character has long since disappeared. Up to now it had suffered under the handicap that the public regards infectious diseases as a matter for the local authorities, and "fever" has not the appeal of some other afflictions. It has had great difficulty in raising money for its work, and this new extension is financially rather a venture of faith.

Opening Ceremony

The Duke of Kent was received by Field-Marshal LORD MILNE, the president of the hospital, who referred to the special difficulties under which a fever hospital had to carry out its work. When the life of a fever patient was saved by sound diagnosis and skilled medical attention and nursing little was said of it and few people were inclined to visit a patient unless it was their plain duty to do so, a very different state of affairs from what happened when a life was saved by surgery. The result was that too few people heard of the work of the London Fever Hospital, and no spectacular gifts came its way. Of the £30,000 required to build a new isolation block £20,000 had still to be found.

The DUKE OF KENT praised the design of the new building, whereby the possibility of infection from patient to patient was completely avoided. The hospital provided facilities which were not given in the ordinary fever hospitals, and admitted all cases of infectious diseases except small-pox. His Royal Highness added a special greeting to the patients, to whom the opening ceremony was relayed.

Sir WILLIAM WILLCOX, speaking to a vote of thanks to the the Duke of Kent, said that the special isolation block had been desired by the medical staff for many years. He gave a brief outline of recent progress in the treatment of infectious diseases. There was now, he stated, a reasonable hope of stamping out diphtheria by the preventive inoculation of healthy children with the diphtheria toxoid. Municipal authorities were beginning to establish immunization clinics against the disease, a movement worthy of every encouragement. At the hospital there had been virtually no deaths from scarlet fever for several years. The mortality for measles was now seven times that for scarlet fever, and during the past year over 1,000 had been completely protected from measles by the use of the preventive serum prepared at the hospital from convalescent patients.

The International Labour Office decided in 1935 to publish a supplement to *Occupation and Health*, which was an encyclopaedia of hygiene, pathology, and social welfare issued by the Office in 1925. The first instalment of the supplement has now been published, and consists of brochures on (1) allergy and occupation, (2) asbestos, (3) beryllium (glucinium), (4) pneumoconiosis, and (5) silicosis. A special loose-leaf binding cover will be offered to subscribers to the supplement. The subscription rate for 500 pages, including the cover, is £1, and orders may be addressed to the International Labour Office at 12, Victoria Street, London, S.W.1.

MEDICAL STUDENTS' CONFERENCE

THE TRAINING OF THE DOCTOR

A medical students' conference, under the auspices of the National Union of Students, was held in London from July 12 to 15, when the general subject of discussion was "The Training of the Doctor." The conference was preceded by a dinner at which Lord Horder was the principal guest. At the end of the conference visits were paid to the Pioneer Health Centre at Peckham and to three London hospitals—Middlesex, Royal Free, and University College—where special demonstrations were arranged for the benefit of the students. The conference was attended by delegates from all the universities in Great Britain and Ireland.

The Medical Curriculum

The first address was given by Sir HENRY BRACKENBURY, chairman of the British Medical Association Committee on Medical Education. He began by referring to four important documents on the subject issued during the last few years. These were, in chronological order, a volume entitled "Medical Education"—an exhaustive study principally of the conditions in the United States—a valuable treatise compiled by the Health Section of the League of Nations; the report of the British Medical Association committee; and a report by a body representing the Universities and Royal Colleges. The last-named was compiled by teachers only; the B.M.A. report by a composite committee.

Sir Henry Brackenbury described in detail the attitude of the General Medical Council towards the proposals in the B.M.A. report. Four main suggestions came forward: (1) that the standard of general education for admission to the profession should be raised; (2) that the preliminary scientific requirements should be widened; (3) that departments in medical schools should not be segregated, and that more attention should be paid throughout to the preventive aspects of medicine and to the living body rather than the cadaver; and (4) that there should be a period of responsibility under supervision at the end of the training, but included in the medical course. Some of the B.M.A. suggestions had been implemented, though imperfectly, by the General Medical Council; others had been negatived, including the suggestion that it was not necessary that dissection of the whole cadaver should be undertaken by every medical student. The B.M.A. committee believed that a knowledge of the human frame could be taught partly by dissection by the students on a part of the cadaver, but also by demonstrated dissection by some more expert hand, specimens in museums, and, above all, demonstrations on the living human body. One surgical member of the B.M.A. committee, indeed, had held that dissection was of no use at all, because what had been learned in dissection had to be unlearned in operative surgery. The objection to the dissection of the whole cadaver, on which the General Medical Council insisted, was that it took a great deal of time which might be saved during the first two years of the curriculum. Another important suggestion was that at the end of the student's training, before registration, six or perhaps nine months should be passed as a period of responsibility under supervision, following which there would be an oral examination on that experience only. This was being pressed, and he fully expected that at the next revision an arrangement somewhat on those lines would be introduced.

The Teaching of Psychology

During the ensuing discussion a good deal of interest was evinced by the students in the teaching of psychology. Sir Henry Brackenbury, in reply to questions, said that the demand for the inclusion of the teaching of psychology in the first two years in connexion with physiology, and in the clinical years in connexion with medicine, came very emphatically from the students themselves. The longer a man was in practice the more aware he became of the paramount

importance of the teaching of psychology in its clinical aspects. But such instruction was very difficult—some teachers said impossible—first because the student by the mere fact of his youth had not sufficient experience to appreciate psychological problems, and again because the actual treatment of persons with psychoneuroses had to be conducted in seclusion, so that it was difficult to introduce even a small body of students. Both these were formidable obstacles, but he believed they could be overcome by proper teaching, and wherever effective teaching of this kind had been introduced, to judge from the earnest attention given, it was the most popular course of all.

Pre-clinical Subjects

Professor C. A. LOVATT EVANS addressed the conference on the relation of pre-clinical subjects to the medical curriculum as a whole. He began by quoting Stephen Leacock to the effect that if he founded a university the first thing he would do would be to establish a smoking room, then a dormitory, and afterwards, when funds permitted, a decent reading room and library, finally going on to get some textbooks and hire a professor. This was his way of suggesting that the essential thing in university education was contact with other people, particularly those studying other subjects. British medical education, said Professor Lovatt Evans, was still one of the outstanding trainings in the world. Other countries might have longer or more specialized courses, or, on paper, more searching requirements or examinations, but the fact remained that medical education in Great Britain was of as good general standard as in any other country, and better than in a good many.

Were all the pre-clinical subjects essential to medical education? Of late there had been a good deal of talk of the need for a more vocationally directed training with rather less of pure science. Was this claim at all justified? People like himself who were educators had to examine themselves as to whether the students coming to them had the right sort of preliminary education, whether they were the right sort of student, whether they were too numerous or too few. Was there any means of knowing at an early stage whether a student had an aptitude for medicine or not? He felt there was some room for improvement in the opportunities offered at school before entering the medical curriculum. Many lads who made their way to the university nowadays had been "forcibly fed" in their education with a view to getting matriculation or a scholarship at an early age, with the result that their general culture suffered. Although a fair proportion of students at the "Intermediate" showed a reasonable standard of literacy, far too high a proportion had "a standard so low and shocking as would be a disgrace to any child of 11 or 12, and of average mentality." It was clear that such students had an unsuitable early education or were intellectually unfitted to enter the profession. Examiners had a duty to the public, to the profession, and to the candidates themselves to keep such candidates from going on into a profession to which they would be no credit.

Too Many Students in Medicine?

Professor Lovatt Evans went on to ask whether there were too many students in medicine. Up to the present it seemed that those entering were absorbed, but in all countries there were now twice as many students as there were before the war, and in some countries the greatest increase had been in medicine. It would be very serious to have an unemployed professional proletariat. Was there any way of finding out early whether students had a right aptitude? Aptitude tests had been devised in the United States to estimate a candidate's adaptability by trying to find out what remained to him after most of the forgettable things had been forgotten, and also to test his ability to work under pressure. A special mental aptitude test which had been devised showed that most of the medical students could pass the test very much better than students in other branches of learning.

He discussed the pre-clinical subjects one by one, and came to the conclusion that all of them were necessary. What about biology, for example? It should not be forgotten that many of the ills which afflicted or threatened the world were products of the supremacy of the exact sciences, whereas the hopes of mankind were based upon the possibility of its rescue by comparable advances in biological science, meaning sociology, economics, ethics, perhaps heredity and race purity, but free from political claptrap of all kinds. He believed that the subject-matter of all pre-clinical subjects was so ample that all of them could be and usually were arranged so as to provide a maximum of all that was educationally desirable and vocationally useful. Anatomy was of the same absolute importance as in former years, but of less relative importance, and in the University of London half the student's time was now given to the physiological group. In the sense that the anatomy now taught was of the living body rather than of the cadaver there has been an advance in anatomical teaching. He regarded the physiological group—biochemistry, biophysics, experimental physiology and pharmacology—as representing the central point of pre-clinical education. In this group the human body was studied along dynamic lines, and if this teaching sunk deep into the student's spirit it gave him a new outlook on life.

The practice in some foreign countries had been deliberately to sacrifice the training of the general practitioner to the interests of the man who intended to devote himself to research. Professor Evans thought that was wrong, but in this country the curriculum was not as well adapted as it might be for the research worker. Possibly two curriculums could be devised—one for the research worker on the scientific side and the other for general practice; but nothing should be done to make it difficult for a practitioner who found that he had talent or opportunity to practise research to indulge his bent. Some valuable pieces of research had been carried out, in the absence of special facilities, by general practitioners. At the present time there was too much money available for the doing of research and not enough for the training of men to do it.

Adequacy of the Curriculum

Mr. ERIC PEARCE GOULD, in addressing another session of the conference, said that he held that there was no profession which made the same contribution to individual and collective well-being as did the medical profession, nor was there any which made the same demand upon a man's memory, his general level of intellect, his kindliness of heart, his understanding of human nature, and his readiness to adapt himself to changing conditions and advancing knowledge. If this was so it must follow that only those who were by Nature endowed with considerable intellectual gifts were fitted to take up the medical profession. There were already upwards of 60,000 names on the *Medical Register*, and during the last five years the average annual rate of increase was 1,800. The medical profession was bound, because of the need for numbers, to accept a standard lower than that which might be considered as ideal. Thus it would appear that the curriculum inevitably was designed not so much to ensure a high standard as to see that the standard was not too low.

Mr. Pearce Gould went on to discuss the various grounds on which in his experience the curriculum was criticized—namely, that it was too full, that the teaching was too much in the hands of specialists, that specialists took an undue part in examinations, that no instruction was given during the curriculum in the art of practice, and that too many people were "ploughed" in examinations. As a member of a conference which had considered the whole subject, he had come to the conclusion that it was out of the question seriously to lighten the curriculum. One had no choice but to accept the inclusion in the curriculum of some instruction in every branch of the practice of medicine and the ancillary sciences on which that practice was based. Unless the students were given a very wide view not only of the fundamentals but of the widening avenues of actual practice, they could not be given the background which enabled them to grasp the subsequent advances. He declared

that candidates did not get "ploughed" in surgery because they were not surgeons. They "ploughed" themselves because they had not learnt to appreciate the fundamentals of just that part of medical practice which happened to have a surgical value. He desired to see in all examinations in anatomy and physiology actual physicians and surgeons sitting in the examinations with the professors in those subjects.

Teaching the Art of Practice

The difficulty in teaching the art of practice, Mr. Pearce Gould continued, was to find the right type of man to give the right type of instruction. Surely the art of practice was something which could not be taught. The difficulty of the examiners was to decide whether the candidates were fit, the very next day, to go out and assume the rights and responsibilities of qualified medical practitioners. That being so, quite a heavy proportion of people were bound to be "ploughed."

One woman student from Birmingham University, in the discussion, mentioned the value of lectures on national health insurance practice, which had been given in Birmingham by Dr. Guy Dain. Mr. Pearce Gould said that it would be a matter of machinery for the Ministry of Health to prohibit any qualified practitioner from going on the insurance panel until he had received such instruction. But in his view the art of practice was much wider than learning the regulations of such a system as national health insurance. It was fairly easy to give such instruction because it was all cut and dried. He held that one could not really teach the coming doctor how to handle people, how to evaluate those outside conditions which had a bearing not only on diagnosis but also on treatment, how to talk to patients, how to judge whether someone was telling the truth or his motive in withholding it, how much sympathy to express, and when to adopt, if necessary, a dictatorial tone.

In reply to another student-speaker who complained that the curriculum was too full, Mr. Pearce Gould said that he saw a good deal of medical students and noticed very little sign of serious overwork. The curriculum as prescribed was only a daytime thing. The student had his evenings and week-ends, and he thought it required only a moderate degree of industry to get through the necessary reading.

One male student declared that if the profession was equally open to both sexes in all the medical training schools, it would be possible to enlarge the scope of student material by bringing in numbers of intelligent people (women) who were able to make good doctors in due course.

The final event of the conference was a general discussion on preventive medicine, which was opened by Professor W. W. JAMESON.

At a meeting of the last court of directors of the Society for Relief of Widows and Orphans of Medical Men, with Mr. V. Warren Low, president, in the chair, three new members were elected. Grants amounting to £2,423 were voted for the half-yearly payments to the widows and orphans in receipt of relief. Included in this sum was one of £78 for special grants to enable three orphans to study for professional careers. A gift of three articles of jewellery and two small Dutch paintings had been received from the executors of the late Mrs. Braley-Thomas. A widow of a deceased member applied for relief and she was voted an annual grant of £50 from the ordinary funds and one of £25 from the Bricknell Fund. It was decided that the proposed dinner to celebrate the 150th anniversary of the foundation of the society should not be held. The directors desire to bring to the notice of medical men the great advantages that may accrue by joining the society. Membership is open to any registered medical man who at the time of his election is residing within a twenty-mile radius of Charing Cross. Relief is only given to the necessitous widows and orphans of deceased members. Full particulars may be obtained from the secretary, 11, Chandos Street, Cavendish Square, W.1.

Local News

ENGLAND AND WALES

Voluntary Hospitals Committee for London

The Voluntary Hospitals Committee for London, whose office is at 10, Old Jewry, E.C.2, has recently extended its area, and, the term of office having expired, a new committee has been elected for the next five years. Officers have been elected as follows: chairman, Mr. Oliver N. Chadwyck-Healey; vice-chairman, Dr. A. M. H. Gray; treasurer, Lord Annaly; secretary, Mr. A. G. L. Ives. The following is a list of the members elected by the hospitals:

Hospitals with Undergraduate Schools

Dr. H. E. A. Boldero.
Lt.-Gen. Sir George Cory.
Professor L. S. Dudgeon.
Dr. Geoffrey Evans.
Dr. A. M. H. Gray.
Mr. Norman Lake, F.R.C.S.
Capt. H. L. Milsom.
Sir Frank Newnes, Bt.
Mr. Austin Taylor.
Mr. F. P. Whitbread.
Mr. G. T. Whiteley.
Sir Charles Wilson, M.D.

Hospitals without Undergraduate Schools

West and West Central:
Sir John Weir, M.B.

South-West:
Capt. G. M. Eden.
Dr. T. A. Matthews.

East:
Mr. Percival Cole, F.R.C.S.
Mr. G. A. Hepworth.
Major Raphael Jackson.
Mr. Frank Jennings.

North-West:
Mr. Harold Pearson.

South-East:
Mr. F. A. Lyon.
Mr. F. L. Richardson.
Dr. C. E. Sundell.

North:
Mr. G. G. Panter.
Mr. F. D. Saner, F.R.C.S.

Special Hospitals

Children's:
Mr. O. N. Chadwyck-Healey.
Dr. Reginald Jewesbury.
Mr. Arthur Morley, K.C.
Sir Edward Penton.

Women and Maternity:
Mr. J. V. O'Sullivan, F.R.C.S.
Mr. L. Carnac Rivett, F.R.C.S.
Mr. C. S. Wentworth Stanley.

Chest:
Sir A. Kaye Butterworth.

Ophthalmic:
Mr. A. J. M. Tarrant.

Nervous:
Mr. J. P. Wetenhall.

Ear, Nose, and Throat:
Mr. Harold Kisch, F.R.C.S.

Ungrouped:
Lord Annaly.
Mr. J. Swift Joly, F.R.C.S.
Capt. Robert Whitney.

Atmospheric Pollution

Twenty-four representatives of local authorities and other organizations co-operating with the Department of Scientific and Industrial Research in investigations into the nature and extent of atmospheric pollution met recently at the offices of the Department. Alderman D. Adams, M.P., of Newcastle, presided over the conference, which has now been meeting regularly for ten years. It was reported that during that period there had been a marked increase in the number of places at which observations of deposited and of suspended matter were being regularly made by co-operating bodies, and that in addition a continually growing number of regular observations were now being made of sulphur gases in the atmosphere by methods which had since been introduced. The conference expressed strong belief in the importance of continuing and extending the investigation in order to provide the assured basis of fact necessary for determining the nature of remedial measures desirable and for estimating their effect when introduced. Dr. G. M. B. Dobson, F.R.S., Chairman of the Atmospheric Pollution Research Committee, presented a report on the progress of the investigations carried out under his committee. He dealt first with

the work in progress at the special survey of atmospheric pollution in and around Leicester. Routine measurements had now been systematically made for a year over a considerable area to obtain information about the behaviour of pollution under various weather conditions. It was proposed to continue these for a further year at least. The work of the survey also included tests under practical conditions of new types of instrument and research on methods of measurement.

SCOTLAND

Surgical Research Department at Edinburgh University

The Minister of Health, Dr. Walter Elliot, opened the extensions to the surgical research department of Edinburgh University on July 20. They consist of an extra floor for laboratories and research rooms. The operating theatres, which were a leading feature in the original building, have been refitted and compare favourably with those of any modern hospital. There is also a medical art studio staffed by two fully trained medical artists. When this department was opened in 1926 it was the first of its kind in the Empire, but similar departments have since been introduced elsewhere. Dr. Elliot, at the opening ceremony, said that the function of the department was threefold: (1) the use of the experimental method in medical research; (2) the intimate study of the anatomy and the pathology of the spread of disease; (3) the gathering together of the younger members of the school for discussion of experimental physiological, pathological, and clinical problems. The importance of correlating all the most recent advances in physiology with practical problems in surgery could not be overemphasized. That the younger generation of surgeons should be trained in the controlled observations of the laboratory was the best guarantee that a high standard of observation and record would prevail in our hospitals. Referring to the experimental work of the department, Dr. Elliot mentioned the researches into the causes of gall-bladder disease and of peptic ulceration of the stomach and duodenum, and into the cause of death in various forms of intestinal obstruction. The mechanism of massive collapse of the lung following operation had been studied, as also had the relation of kidney disease to rise in blood pressure. The successive changes which resulted when the outflow from one kidney was obstructed had formed the subject of a prolonged and delicate group of experiments. A series of experimental observations had been made on the relationship of disturbed nerve function to disorders of the abdominal viscera. With regard to the spread of cancer in man a special feature of the department had been the use of microscopical sections of whole organs combined with a detailed study of the spread by the lymphatic route. Thus cancer of the stomach, of the colon, and of the rectum had been the subjects of elaborate investigations, and authoritative data had been obtained. The feature common to all the research work, Dr. Elliot continued, had been the co-ordination between clinical problems in the hospital and experimental investigation in the laboratory. It was this stimulus of human interest and human need which lent to the work of a surgical research department the living interest which was often lacking in purely academic investigations.

The tenth French Paediatric Congress will be held at the Hôpital des Enfants Malades, Paris, from October 6 to 8, when the following subjects will be discussed: Severe anaemias in infancy, introduced by Dr. Louise Weill of Lyons; toxi-infections in infancy, introduced by Dr. R. A. Marquézy and Mlle Ladet; and megacolon and dolichocolon, introduced by Drs. Rohmer and Boppe. Further information can be obtained from Dr. Maurice Lamy, 94, Rue de Varenne, Paris, 7e.

Correspondence

Testimonial to Dr. Robert Hutchison

SIR,—The election of Dr. Robert Hutchison to the Presidency of the Royal College of Physicians has given the greatest pleasure to a very wide circle of friends to whom Robert Hutchison has stood for all that is sound in the practice of medicine and all that is good in tradition. We feel that this occasion provides the opportunity of showing our esteem to him personally and acknowledging in some degree his fine contribution to medicine.

It is proposed to commemorate the occasion by presenting Dr. Hutchison with his portrait, and with this purpose in view we venture to make known the project to old students, friends, and societies in London, Edinburgh, and the Provinces.

Personal donations should not exceed three guineas. Cheques should be sent to the Manager, National Provincial Bank, 10, Marylebone High Street, London, W.1, for the credit of the Robert Hutchison Testimonial Fund. —We are, etc.,

LANCELOT BARRINGTON-WARD.
HUBERT BOND.
EDWIN BRAMWELL.
DAWSON OF PENN.
DUNCAN C. L. FITZWILLIAMS.
FRANCIS FRASER.
R. S. FREW (Hon. Treasurer).
WILLIAM GOSCHEN.
F. J. MCCANN.
MACMILLAN.
ARTHUR MACNALTY.
FREDERICK KAY MENZIES.
GEORGE NEWMAN.
GEORGE RIDDOCH.
HUMPHRY ROLLESTON.
BERTRAM SHIRES.
FREDERICK STILL.
G. A. SUTHERLAND.
JAMES TAYLOR.
JAMES WALTON.
DAVID WILKIE.

Cancer and Heredity

SIR,—The question whether malignant cells differ from normal cells in their genetic constitution is one of the central problems of cancer. If the existence of such a difference could be demonstrated conclusively, it might justifiably be claimed that an explanation of that phase of the causation of cancer which in a recent lecture I called "the growth of cancer" had been found. The statement made recently (*Journal*, July 9, p. 93) by Dr. P. A. Gorer, in which he refers to certain observations as presenting evidence for the existence of such a difference, deserves therefore the most careful consideration. The observations referred to by Dr. Gorer are, first, that "a virus-induced tumour" in the rabbit will regress spontaneously, and, secondly, that "the members of a pure line can be immunized against leukaemic cells derived from other members of the line."

The virus-induced tumour of the rabbit referred to by Dr. Gorer is the infective papilloma discovered by Shope. The argument underlying this conclusion is, if I understand Dr. Gorer correctly, that the production of cytotoxins, which he assumes to be responsible for the regressions of tumours, demonstrates necessarily the existence of a genetic difference between the normal cells of an organism and the "tumour cells" which have arisen from them. It is presumably true that cytotoxins can be produced in the organism by cells having a different genetic constitution, but it does not seem to me to follow logically that we can invert this argument and accept the appearance of cytotoxins as conclusive evidence of the existence of such a genetic difference. Furthermore, neither the infective papilloma nor leukaemia is a representative example of the phenomenon of malignancy. In fact, the frequency with which the rabbit papilloma regresses spontaneously after an initial cellular prolifera-

tion distinguishes the behaviour of this tumour sharply from the behaviour of a spontaneous malignant growth. The property which characterizes a malignant growth is its autonomous continued growth. Regression of a spontaneous malignant growth is a phenomenon so exceptional and so incalculable that it may be given as the modern example of a miracle. The initial epithelial proliferation of the Shope papilloma and its subsequent regression is a phenomenon exhibited also by a number of other virus diseases. Thirty-five years ago Borrel by a close comparative study of such virus diseases, which he called *epithelioses infectieuses*, and of the epitheliomata arrived at the conclusion that *il y a analogies, il n'y a pas identite*.

If we are to accept the spontaneous regression of the rabbit papilloma of Shope as evidence for the existence of a genetic change in the cells of this virus-induced epithelial proliferation, there seems to me no reason why such an argument should not apply also to the regression occurring in epithelial proliferations produced by other viruses. We should then arrive at the conclusion that the entrance into epithelial cells of a number of different viruses leads to a change in the genetic constitution of these epithelial cells. The regression of the virus-induced rabbit papilloma does not, therefore, present very convincing evidence for the existence of genetic differences between normal cells and the cells of this papilloma, or of malignant cells generally. But even if, for the sake of the argument, we accept the line of reasoning adopted by Dr. Gorer, there remains still the outstanding fact that the overwhelming majority of malignant tumours arising spontaneously in an organism as distinct from those induced by viruses never show any regression. If the occurrence of regression is to be interpreted as evidence for the existence of genetic differences between normal and malignant cells, does the absence of regression not present evidence for the absence of such genetic differences?—I am, etc.,

Imperial Cancer Research Fund, Mill Hill, N.W.7. W. CRAMER.

The Origin of Cancer

SIR,—As an evolutionist let me assure Dr. J. V. Fiddian (*Journal*, July 9, p. 92) that no one was more disappointed than myself on learning—after making careful inquiry at the fountain head—that the hypothesis of the conjugation of the cells of a malignant neoplasm had been abandoned; for, if true, it would have lent strong support to the view of the genesis of cancer in terms of reversion. But it is worse than useless hugging a fancy in the face of "plain plump fact." Dr. Fiddian will probably not persist in cherishing an illusion after reading the following statement by Dr. Bashford in the Annual Report of the Imperial Cancer Research Fund for the year 1905 to 1906, than which nothing could better show the true scientific spirit with which that investigator was imbued:

"During the past year a paper has been communicated to the Royal Society (*Proc. Roy. Soc.*, 1906, Series B, **77**) showing that the nuclear figures in cancer cells believed to indicate the occurrence of a true 'reducing division' are in reality of the ordinary type. In that paper we withdrew categorically any support which our observations might be conceived to furnish to this hypothesis, or to the inference others have based upon it that essential similarities existed between cancer and reproductive tissue. The attempt to explain the continued power of growth and the fluctuations in cancerous proliferation on the assumption of a 'reducing division' followed by a nuclear fusion has been abandoned."

—I am, etc.,

Egham, Surrey, July 13. CHARLES M. BEADNELL, Surgeon Rear-Admiral.

When to Start Sulphonamide Treatment in Gonorrhoea

SIR,—I was much interested in the letter from Colonel L. W. Harrison in the *Journal* of July 9 (p. 90). His advice that sulphonamide remedies should not be given in the early acute stages of gonorrhoea has also been borne out in the treatment of children. Since August, 1937, at the Children's Medical Home, Waddon, and at the South London Hospital for Women, twenty-eight children, aged from 3 to 13 years, have had courses of prontosil album. The response was most satisfactory clinically and bacteriologically in all except five cases. It is significant that in four of these unsatisfactory cases treatment was started within two to seven days of the onset of infection. They showed a slight clinical improvement, but this was not maintained, and tests remained positive for gonococci.

The twenty-three cases which reacted well to treatment had infections varying in duration from three days up to three and a half years before their admission to the home. They have now been watched for periods of from eight to thirty-five weeks since the completion of treatment. Thirteen have passed full tests of cure—that is, a minimum period of six months' observation and at least twelve negative tests, including the final set after a provocative vaccine. Six cases have had courses of uleron. Three, with durations of infection of two, four, and nine weeks respectively, have now been watched since the completion of treatment for twenty-seven, twenty-four, and twenty weeks respectively without relapse. The remaining three cases did not respond to prontosil album and they showed no improvement under subsequent treatment with uleron. It is noteworthy that in the treatment of gonococcal vulvo-vaginitis in no case where the initial response to sulphanilamide treatment was good has there been as yet a relapse while the child remained in the home. Follow-up reports from the venereal disease clinics, however, show that two of the chronic cases had "suspicious smears" and received further courses of sulphanilamide after leaving the home.

In recent weeks, working in conjunction with the venereal diseases department of Guy's Hospital, fourteen children have had courses of T 693. The immediate clinical and bacteriological response has been excellent in every case, but no child has yet been watched for a longer period than two months since the completion of treatment. The duration of infection before starting treatment in five cases has been from two up to twenty-five days, and in the remaining nine cases from five weeks up to eight months. It is too early at present to speak with any degree of certainty, but there is a possibility that this new drug will prove more efficacious in the treatment of early acute cases than have other drugs of the sulphonamide series.—I am, etc.,

London, W.1, July 12. D. KATHLEEN BROWN.

Anti-venereal Measures

SIR,—I am obliged to Miss Alison Neilans (*Journal*, July 9, p. 94) for correcting the inaccuracy in my reference to the decline of syphilis in Denmark, and even more so for admitting that Denmark and Sweden in this respect have "certainly achieved better results than England and Wales." I regret, however, that she seems to be as hostile to compulsion as in the controversy over the Edinburgh Bill of 1928, when it was argued that wherever compulsion had been tried it had proved a failure, that it

was bound to result in concealment of disease, in resort to treatment by unqualified persons, blackmail, and police persecution of prostitutes. If the interpretation of statistics is a debatable matter, there is no ambiguity about the statements in the Scandinavian Report regarding these other subjects. Colonel Harrison and his colleagues (p. 120) "could find no evidence that the operation of the law has led to concealment of disease to any appreciable extent or imposed undue hardship on the people." As regards blackmail (p. 116) they "made careful inquiries in Denmark and Sweden, both of the public health and the police authorities, whether any trouble has been experienced in this respect. In both countries we were informed that there had been some instances in the past, especially in the years immediately following the coming into force of the '*lex veneris*' in each country, but that nowadays anything of this sort is very rarely found."

With the old arguments against compulsion thus demolished by testimony that Miss Neilans accepts, I would rest content but for a most misleading phrase in the last paragraph of her letter. "The choice before us," she writes, "is to go on continuously improving our national fight against V.D. on voluntary methods or of abandoning our present system and going all out for compulsion." The choice is nothing of the sort! No sane critic of our present methods of dealing with venereal diseases suggests abandoning them. It was wise policy to provide facilities for treatment and educative propaganda, in the years immediately following the war, before making treatment compulsory in this country. But, in the opinion of many of us, it is more than time that these measures were supplemented by the granting to public health authorities of powers to trace sources of infection and to secure necessary treatment, if need be by compulsion. The Treyethin Committee in 1923 recommended the trial of compulsory measures in a limited area in this country. In the light of the Commissioners' report —their evidence, *not* their conclusions—no fair-minded person has good grounds for opposing such an experiment.

In conclusion, let me remind Miss Neilans, whose work is directed so untiringly to the welfare of women, that under the present voluntary system it is the women and children who suffer most. The infant death rate from syphilis is all but three times as great in England as it is in Sweden (p. 119). In that country, too, there were many who were afraid that compulsion would do more harm than good. Thus runs the report (p. 114): "In Sweden, it appears that there was acute divergence of opinion in the early years of the present century on the most suitable methods for dealing with venereal diseases and the associated problem of prostitution. . . . Notwithstanding the divergent views held on the matter of compulsory treatment prior to 1918, we did not find in any quarter the opinion that the law of 1918 was a mistake, and there appears to be general agreement that the ill results which some authorities anticipated would follow the introduction of a system of compulsory treatment have in fact not occurred."—I am, etc.,

Brentwood, July 9. ROBERT FORGAN.

Chicken-pox followed by Panophthalmitis

SIR,—The reports of unusual cases of chicken-pox in recent issues of the *Journal* prompt me to record the following case of chicken-pox which was followed by panophthalmitis. The clinical history has been supplied by Dr. M. D. Mellersh, house-physician to the Chelmsford Hospital.

A male child, aged 2 years and 10 months, was admitted to Chelmsford Hospital on February 16, 1938, with fever and a petechial rash. He had had scarlet fever at the age of 12 months. On the morning of February 15 the child had complained of aching pains in the limbs and of sore throat. In the afternoon a rash appeared, and during that evening he had a convulsion lasting three-quarters of an hour. On February 16 he was delirious and vomited; he was admitted to hospital. On admission the child had a petechial rash mainly distributed on the legs, thighs, and forearms, and a temperature of 102° F. The throat was inflamed. The pupils were equal in size and dilated, but reacted normally. No rigidity of the neck was present; Kernig's sign was negative. On February 17 the temperature was 101° F. and the petechial rash was fading. The left eye showed conjunctival oedema.

I was asked to see the child on February 18, and found a panophthalmitis of the left eye, with pus in the anterior and vitreous chambers. There was no evidence of meningeal infection. The corneal epithelium was intact and showed no staining on the application of fluorescein. On February 19 the child developed a typical chicken-pox rash; at about the same time other children of the same family developed chicken-pox at home. This fact was communicated to me by the doctor who sent the first child to hospital; the chicken-pox in his case pursued a mild course. The eye gradually deteriorated and its tension became subnormal; its contents were eviscerated. Dr. F. E. Camps, pathologist to the Chelmsford Hospital, reported that cultures from the pus in the vitreous chamber grew colonies of *Staphylococcus aureus*.

I have been unable to find any record of a case of panophthalmitis in chicken-pox, but cases have been recorded in typhus, typhoid fever, variola, scarlet fever, anthrax, influenza, and diphtheria.—I am, etc.,

Chelmsford, July 9. S. G. CORNER, M.D.

"Psychosomatic Illness"

SIR,—All who, within recent years, have studied the writings of Dr. James L. Halliday upon what one might call the psychic side of everyday illness must have been deeply impressed and influenced, and the further reading, investigation, and observation to which these studies led have profoundly influenced our practice. I am indeed grateful for a widening of my outlook, and I am confident that my patients, to no small degree, have benefited by my learning even a little of what I was taught nothing in my student days, over thirty years ago. I was, however, while interested, somewhat shocked upon my perusal of his paper in the *Journal* of July 2, and the reason was that he should do injury to a good case by calling upon the aid of Dr. P. L. McKinlay, the medical statistician to the Department of Health for Scotland. I have great admiration and respect for the gifts of Dr. McKinlay, and not a little fear.

When we consider the "anxiety state" created in so many of our young men at the most vital time of their lives by unemployment, the strain upon multitudes of our young women by employments for which, either mentally or physically, they were not created, the excessive cocktail drinking of so many females in the seventeens to twenty-fives, the excessive smoking amongst both young men and young women, and the strain generally incurred as a result of the work, sport, and the actual living of modern life, we cannot but believe in the profound influence of a psychoneurosis and a disturbance of the psycho-neuro-endocrine system in the promotion of modern invalidism, and the burdens—physical, mental, and financial—which this invalidism is inflicting upon all classes involved. We must not, however, allow the realization of these facts, the influence of papers by men in the mental and official groove of Dr. Halliday, and the

statistics of Dr. McKinlay to overweigh our sense of the physical. "Mechanistic treatment" and investigation are necessary in the majority of the cases of the disorders of which Dr. Halliday writes.

I have had within the last few months a case of carcinoma of the stomach at the age of 19 years, two cases at the age of 22 years, and one case at the age of 27 years. It would have been worth the risk of "fixing symptoms" to have saved these lives by a mechanistic investigation and treatment, the failure to carry out which, on account of the early vagueness of the symptoms, cost the lives concerned. Rheumatoid arthritis in the young and osteo-arthritis in the middle-aged mean absolute ruin for these lives unless we invoke every means of investigation and treatment. It is folly to call these diseases "psychosomatic"—at least no proof has been given—and, whatever the risk of "fixing symptoms" may be, to avoid any means of investigation or treatment known would be unpardonable. Then there is heart disease in the young. We general practitioners spend many moons pulling these cases over their rheumatic fever with its complications—peri-, myo-, and endocardial. Our patient appears before the regional medical officer just when we allow him or her to move gently about, and the heart is apparently, but not in reality, sound. "Ah!" says the regional officer, "a case of defect of the psycho-neuro-endocrine system." Up go the statistics, back to duty goes the patient, and a life is ruined because an official mind clouded by a theory ignored practical experience and common sense.

I accept and admire much of Dr. Halliday's work; he has opened up a comparatively new and most helpful line of thought for us all; but do not let him go too far. Above all, in such an indefinite sphere as the psychic, let him avoid the statistician or his whole work will tumble down like a pack of cards.—I am, etc.,

Tain, Ross-shire, July 7. E. K. MACKENZIE.

The Unconscious Mind and Medical Practice

SIR,—In your issue of July 9 (p. 93) the late Dr. Harry Campbell complained that psycho-analysts give no precise definition of the term "unconscious." This definition has been given so many hundreds, or thousands, of times, and has never varied since psycho-analysis began fifty years ago, that I had not thought it necessary to include it once more in my article. It is simply "that part of the mind of which the subject is not conscious."—I am, etc.,

London, W.1, July 12. ERNEST JONES.

SIR,—One can quite understand your correspondent, the late Dr. Harry Campbell, being puzzled at a first introduction to the concept "unconscious fantasy." To the practising analyst all psychogenic symptoms, dreams, and much behaviour are merely outward and visible signs of fantasies which are still unconscious. If, for instance, a patient has a phobia of entering a tunnel it means that he is the victim of a fantasy that dreadful things will happen to him in that tunnel. In that he does not know what these things are, or, indeed, why he is afraid, the fantasy is an unconscious one. Similarly, if a patient asks if the door is properly closed it usually means that he has the fantasy of somebody listening and overhearing his secrets, though here the fantasy may not be entirely unconscious. It is the business of analysis to bring these fantasies into the patient's consciousness in order to free him from their domination over his feelings and conduct and as an essential step towards cure.—I am, etc.,

London, W.1, July 15. CHARLES BERG, M.D., D.P.M.

Abortion and the Law

SIR,—Much publicity is being given in the lay Press to an alleged breach by a distinguished medical man of the law relating to abortion. The question has therefore been raised of how far this law is open to criticism on medical, social, and genetic grounds. We are aware that the subject is now being fully considered by a Departmental Committee, but we understand that the findings of this committee will not be made public in the immediate future. Many arguments have been advanced in favour of widening the grounds upon which it should be legally permissible for pregnancies to be terminated. It is to one only of these arguments—namely, the genetic—to which we would like to draw attention. Certain recommendations have been made by a Departmental Committee on Sterilization as to the categories of persons for whom facilities for voluntary sterilization should be made available on genetic grounds. We associate ourselves with these recommendations.

From the biological standpoint we consider a sterilizing operation to be a more significant and drastic procedure than a termination of pregnancy, in that the first measure destroys fecundity, while the second does not. We therefore think that facilities for the voluntary termination of pregnancy should be made available to those persons specified by the above-mentioned Departmental Committee on Sterilization as being appropriate candidates for voluntary sterilization. We further think that similar facilities should be extended to women who have become pregnant as the result of an incestuous union or of rape. That a child who has been brutally conceived as a result of a criminal assault on its mother will be handicapped later in life by environmental and nurtural factors can scarcely be disputed. It is no less obvious that the child is liable to inherit from the father some at least of the qualities which prompted the action which gave it life. These are not qualities which anyone would wish to be perpetuated.

The force of these considerations has been recognized by at least one foreign country. In Denmark there took effect on April 1 of this year a law according to which a pregnant woman may have a pregnancy terminated in the following cases:

1. If the termination of pregnancy is necessary in order to avert serious danger to the life and health of the woman.
2. If the woman has become pregnant as a result of an incestuous union or of rape.
3. If there is obvious danger that the child, owing to hereditary disposition, will suffer from insanity, mental deficiency, from grave mental disorder, epilepsy, or serious incurable physical disease.

(A translation of this law appears in the *Eugenics Review*, volume xxx, No. 1 (April, 1938), p. 43.)

The grim predicament of the mother, the future well-being of the child thus inauspiciously launched into existence, and the interests of posterity simultaneously call for a widening of the grounds upon which abortion should be permitted.—We are, etc.,

HORDER (President).
HAVELOCK ELLIS.
JULIAN HUXLEY.
E. MAPOTHER.
R. RUGGLES GATES.
J. A. RYLE.
W. LANGDON-BROWN.
C. P. BLACKER (General Secretary).

The Eugenics Society, London, S.W.1, July 20.

Medico-Legal

CHARGE OF PROCURING ABORTION

Mr. Bourne Acquitted

On July 18 and 19 Mr. Aleck William Bourne, F.R.C.S., was tried at the Old Bailey for unlawfully using an instrument with intent to procure the miscarriage of a woman. (The police court proceedings were reported in the *Journal* of July 9, p. 97.) The indictment as first drawn did not contain the word "unlawfully." This appears in the Offences against the Person Act, 1861, sect. 58, on which the charge was based, and the word was added to the indictment on the motion of Mr. Roland Oliver, K.C., leading counsel for the defence, who maintained that nearly the whole of his case rested on the interpretation of the word. Mr. Bourne pleaded Not Guilty.

Mr. Oliver also asked that any member of the jury who might consider on religious grounds that there were no circumstances in which a pregnancy ought to be terminated should withdraw. The Attorney-General, Sir Donald Somervell, K.C., associated himself with the request, and Mr. Justice Macnaghten warned the jury that if any of them by reason of any preconceived view felt in a difficulty about giving a verdict according to law and evidence, it was desirable in the interests of justice that he or she should retire from the trial. None of the jury, however, left the box. Two members were women.

Case for the Crown

The Attorney-General, who appeared with Mr. L. A. Byrne and Mr. Henry Elam, in opening the case, read the words of sect. 58 of the Act:

"Whosoever with intent to procure the miscarriage of any woman, whether she be or not with child . . . shall unlawfully use any instrument or other means whatsoever with the like intent, shall be guilty of felony."

He explained that the girl had been criminally assaulted and raped, and a man had been convicted of the offence. At that time she had been under 15 and a virgin. On May 21 she was taken to see Dr. Joan Malleson, who came to the conclusion that the girl was pregnant, and wrote to Mr. Bourne a letter which, after introduction, stated:

"Dear Mr. Bourne,

"I have been consulted by the organizer of the Schools Care Committee about a girl of 14 called ——. It is possible that you saw in the paper some three weeks ago that this girl was assaulted in Whitehall by some soldiers. The actual facts were that she was with two girl friends, who ran off and left her, and she was held down by five men and twice assaulted. It appears that she is free of venereal infection, but the Z.A. test has just come back positive.

I gather from the lady who brought her that everybody connected with the case, *i.e.*, the police surgeon, the doctor at her work, the school doctor, etc., all feel that curettage should be allowed her; and I understand that Dr. ——, and possibly some other psychiatrists of good standing, would be prepared to sponsor 'therapeutic abortion.' I presume they must mean on grounds of prophylaxis, because there does not appear to be any nervous disorder present. All this, of course, gets us nowhere unless someone of your standing were prepared to risk a *cause célèbre* and undertake the operation in hospital.

Many people hold the view that the best way of correcting the present abortion laws is to let the medical profession gradually extend the grounds for therapeutic abortion in suitable cases, until the laws become obsolete, so far as practice goes. I should imagine that public opinion would be immensely in favour of termination of pregnancy in a case of this sort.

If there is any chance that, given adequate professional backing, you feel prepared to consider this, I would take a lot of trouble to get people of high standing to see this girl, and should of course feel that it was most valuable if the case was conducted publicly in hospital.

I am told that a rather grim twist is added to this case by the fact that the girl's parents 'are so respectable that they do not know the address of any abortionist'; and are, I gather, having to set about to find one, for they 'could not possibly let her go through with this.' She seems a normal, healthy girl, and on medical terms there is obviously nothing to be said.

I hope you will forgive me for troubling you about this.

With kind regards,

Yours sincerely,

JOAN MALLESON.

PS.—Unfortunately the matter is made a little more difficult by the fact that the girl was admitted to St. Thomas's Hospital under Mr. ——, who I think from the report of his attitude must be Catholic. He took the conventional standpoint that 'he would not interfere with life because the child may be the future Prime Minister of England,' and 'that anyhow, girls always lead men on.' But she is not any longer under his care, nor is it yet public that the Z.A. test is positive."

On May 27 Mr. Bourne had replied:

"I am interested in the case of rape which you describe in your letter. I shall be delighted to admit her to St. Mary's and curette her. I have done this before and have not the slightest hesitation in doing it again. Therefore please let me have the girl's name and address or ask her parents to send her to see me. I have said that the next time I have such an opportunity I would write to the Attorney-General and invite him to take action."

On May 31 the girl's mother had taken her to see Mr. Bourne, and on the same day the father had written to him saying that he gave his consent to "the correction to be done for his daughter in St. Mary's Hospital" as arranged with his wife, on condition that no publicity of any sort was given to the case. On June 2 Mr. Bourne wrote to Dr. Malleson telling her of this request to keep the operation entirely secret, and said that he must respect their wish and that the operation would be done next week. To the father he wrote assuring him that no effort would be spared to keep the matter secret. Sir Donald added that the matter had been brought to the attention of the police authorities, but he did not suggest that this had been in any way due to any act by the defendant, or that he had done anything inconsistent with the undertaking given in his letter. The operation had been performed on June 14.

In conclusion the Attorney-General said that the jury would have to decide, subject to the judge's ruling and on the facts, whether there had been an unlawful use of an instrument to procure a miscarriage. He also admitted that, on the construction of the statute, if it were necessary in order to save the life of a mother to use an instrument to procure a miscarriage he would not submit that that would be an offence under the section.

Evidence for the Prosecution

Giving evidence for the prosecution, the girl said that on April 27 she had been raped by a soldier, and that at that time she had been 14 years and 9 months old. The defendant had performed an operation on her. Her father gave evidence of the correspondence with Mr. Bourne, and said, in answer to Mr. Oliver, that he had given no one permission to publish the case.

Dr. Joan Graeme Malleson said in cross-examination that there was very great variation of opinion among obstetricians and medical people generally about what was lawful in regard to the procuring of abortion. Some went so far as to say that it was not permissible in any case even to save life, and others took the view that it was lawful in the interests of the health of the mother. She shared that view, and held that it was better to perform an abortion than that a woman should be physically, mentally, or nervously broken down by having a child, particularly conceived in such circumstances. She believed that was also Mr. Bourne's view. Many doctors

thought that miscarriage should be permissible upon what might be called "humanitarian" grounds alone, but not many used that term actually for procuring an abortion. She did not know any who thought that was legal. She knew some doctors, however, who would produce a miscarriage when the child was likely definitely to inherit a bad trait. She had heard of doctors who had taken pity on a woman who had been raped, and she thought that right. In answer to the judge, she said she meant pity for a woman where there had been a prosecution for a rape in a court of justice, and not where the woman complained that she had not consented to sexual intercourse. She agreed that danger to a woman's life was increased by the fact that she was only 14, and also that she had been injured in the process of a rape; that her mental condition would be such that she might be in grievous danger, and that her nervous system stood a good chance, or might stand a good chance, of being shattered. She considered that a proper case.

Mr. P. C. F. Wingate said he had been resident at St. Mary's Hospital until the end of June. Before the girl was admitted Mr. Bourne had told him he had been asked to see the girl, that she was pregnant as a result of rape and under the age of consent, and that he had been asked to admit her in order to terminate pregnancy, and also asked to report his action to the appropriate authorities in the hope of making a test case of it. He had understood Mr. Bourne to say that the parents were objecting to the publicity that must follow such a case, but the defendant had not said whether he would report his action to the authorities. A test for pregnancy had been made and the result was positive. He had been there when Mr. Bourne operated on June 14.

Cross-examined by Mr. Oliver, he said that it was proper that before performing such an operation the girl should be kept under observation for a considerable time, and that it was quite proper for Mr. Bourne to do so for eight days. It was careful and proper treatment to repeat the tests for pregnancy and venereal disease which had been done before her admission, to verify both results. If she had had venereal disease the operation would not have been performed because of the fear of infection. He had been present when Mr. Bourne had taken the swab for the venereal test. This would not hurt her; it would be uncomfortable. She had been a little distressed and cried. He had not heard Mr. Bourne say anything that he could remember. Her behaviour had not particularly impressed him; he had rather expected her to be distressed, as the circumstances were very unpleasant for her. He agreed that the girl was a proper subject for curettage.

Chief Inspector Walter Bridger, examined by Mr. Byrne, said that he had called on Mr. Bourne on June 14. The defendant asked whether it was about the girl, and, hearing that it was, he said. "I emptied the uterus this morning; I want you to arrest me." The witness cautioned him and said the facts would be reported to the proper authorities. The defendant said that the girl had been brought by her mother to his house, admitted to St. Mary's Hospital, and placed in his ward under his care, and since she had been in she had been waiting for a pregnancy test, which was positive, and tests for gonorrhoea, which so far had been negative. As an obstetric surgeon, in his opinion it might be dangerous for a girl of her age to bear a full-grown child.

Cross-examined, witness said he wrote down Mr. Bourne's statement in his book as the defendant dictated it. He had wished to warn Mr. Bourne that in no circumstances could an operation be consented to, but as it had already taken place his visit was useless.

Mr. Oliver: Was he rather nettled at that, and did he say that he had his duty as a surgeon and his responsibility, and could not be dictated to by you on a matter of that sort?—No, but I will accept it if he says it.

I gather that you will accept anything he says?—I would, Sir.

This closed the prosecution's case.

Counsel's Submission on the Law

Mr. Roland Oliver said that, as much of the case would turn on the form of the learned judge's direction to the jury, and the law of the case was what his Lordship declared it to be, he invited the judge to direct the jury on the law at that stage. He could not, he said, address the jury and put forward a view of the law unless he knew what the judge held that law to be: he must not put before the jury a different view of the law from that of the judge. The case was not covered by any authority at all. It turned on what the judge decided was the meaning of the word "unlawfully": whether it meant, as the Attorney-General said, that nothing was lawful except for the purpose of saving the life of the mother—he did not know where his learned friend had got that definition from!—or whether, as he himself contended, anything was sufficient justification for an abortion which, in the view of a responsible and skilled surgeon, was for the benefit of the mother's health in the sense that her health would probably be seriously impaired if it was not done. Anything, he continued, which would induce a competent surgeon to remove a limb or an eye for the sake of the patient's health should be sufficient justification for abortion; the same standards should apply. It was fantastic to suggest that a major operation was only justified for the purpose of saving life. In other sections of the Act the words "unlawfully and maliciously" occurred: it was a felony punishable, like abortion, with penal servitude for life to give an anaesthetic or to cause grievous bodily harm "unlawfully or maliciously." It could not be said that an anaesthetic could only be used in a case of life and death. Surgeons who took off arms and legs would be committing the criminal offence of mayhem, or maim, if they were not justified by the benefit to the patient's health. The test should be the same through all sections of the Act. He submitted that a doctor was entitled to induce a miscarriage where, if he did not, there was a danger to the girl's health—using that word in the broadest sense. The jury should be asked: "When Dr. Bourne used the instrument on June 14, was he acting in the honest and reasonable belief, based on adequate knowledge and experience, that it was in the best interests of the girl's health that her pregnancy should be terminated?" Russell on *Crimes* said that the word "unlawfully" excluded from the section acts done in the course of proper treatment in the interest of the life or health of the mother. That statement had stood unchallenged since 1909.

The Judge's Direction

Mr. Justice Macnaghten, addressing the jury, said:

This section contains the word "unlawfully." Counsel are agreed, and it is my opinion, that the word "unlawfully" is not a meaningless word in this section, and it necessarily follows that there may be a procurement of abortion which is lawful. The procuring of abortion was an offence long before 1861. It was an offence by the Common Law of England before ever Parliament existed. It was only in the reign of George III that it was made a statutory offence. Apparently there was some question under the Common Law whether the procuring of abortion by the administration of poison was an offence, and an Act was then passed making it clear that it was an offence. This section was merely a re-enactment of the previous statutory provisions.

The section begins by making it unlawful for a woman to procure her own miscarriage. That undoubtedly has been the law of England from the earliest times. A woman is not entitled to procure her own miscarriage, and the fact that she desires urgently to be relieved of her trouble does not justify the procurement of an abortion. It is true that there is no authority on this matter so far as I am aware. The issue that you will have to try is an issue that has never before been raised, but it is obvious that where the act is done—anyhow in modern times—by a skilled person, without any risk to the

patient, for purpose of saving her life, it must be lawful. We have not had any medical testimony so far—it may be that we are going to have some—but laymen know that there are cases where it is reasonably impossible for a woman to be delivered of her child and survive. In such cases an operation for terminating pregnancy plainly becomes lawful. I have no doubt that has always been the view of the judges of this country, and of the great men who sat in Westminster Hall on the King's Bench.

To-day the position is greatly simplified by an Act of Parliament passed in the year 1929. If, after a child has been delivered and has an existence independent of its mother, the mother or the accoucheur kills the unwanted baby, that is murder, and always has been murder, by the law of England. There arose a case in which it was thought that provision had to be made: where an accoucheur, while a woman was being delivered of a full-term child—because the child was not wanted—killed it before it had an existence independent of its mother, and yet in circumstances that did not amount to the procurement of abortion, because the child was being delivered at full time in the ordinary course of nature. Parliament thought right to provide for that case. Of course it is a case that would very rarely arise, and even much more rarely ever be known of. A Bill was passed through the House of Lords in the year 1928 and sent down to the House of Commons bearing what might be thought the somewhat misleading title of the "Infant Destruction Bill"—a title which might give rise to the idea that it was a Bill for the destruction of infants. The House of Commons never gave it a second reading under that title, and in the following year it was introduced again and passed into law with the more illuminating title of the Infant Life Preservation Act, 1929. It is of tremendous value in throwing light on the law of this subject. Section 1 enacts:

> "Any person who with intent to destroy the life of a child capable of being born alive, by any wilful act causes a child to die before it has an existence independent of its mother, shall be guilty of felony, to wit, of child destruction, and shall be liable on conviction thereof on indictment to penal servitude for life; provided . . ."

And here are the words which require your close attention:

> "That no person shall be found guilty of an offence under this section unless it is proved that the act which caused the death of the child was not done in good faith for the purpose only of preserving the life of the mother."

You will observe that by that proviso it is not for the accused to prove that it was done in good faith for the purpose of preserving the life of the mother; it is for the Crown to prove that it was not done in good faith for that purpose. The burden of proof rests upon the Crown.

The direction which I propose to give you is this. If you are satisfied by the evidence, when we have heard it all, that Mr. Bourne did not terminate the pregnancy of this girl in good faith for the purpose of preserving the life of the girl; if you are satisfied that the Crown have proved that negative, you should find him Guilty. If you think that the Crown have not proved the negative that the law requires them to prove, then you should find him Not Guilty.

What is the meaning of preserving the life of the mother? That is a matter which must depend on the circumstances of the case and on the evidence produced before you. It must be obvious that it may be perfectly lawful to perform the operation if the doctor is of opinion that the continuance of the pregnancy is certainly going to result in the death of the mother. Of course it may be—we may hear, we do not know—that if the operation has to be done, the sooner it is done the better. There are many considerations which influence the decision of the doctor on what should be done in the particular case. If the Crown fail to satisfy the jury that it was not done for the purpose of preserving the life of the mother, then my direction to you here is that your verdict should be a verdict of Not Guilty. If, on the other hand, the Crown do satisfy you that they have discharged the burden placed upon them under the section, then your verdict should be Guilty. I give you that direction in law because of my view that the proviso to Section 1 of the Act of 1929 explicitly states what always has been implicitly in the section under which Mr. Bourne is charged here.

Mr. Roland Oliver: I cannot altogether separate the questions of what is necessary to preserve life and what is necessary to preserve health.

Mr. Justice Macnaghten: I quite agree with you, and it is for the jury, on the facts, to say if they think that the Crown have discharged the burden put upon them. It is a question of fact in each particular case, and nobody can say without knowing the facts of the case whether the abortion was lawful or unlawful.

Case for the Defence

Mr. Roland Oliver then addressed the jury. He said that probably never before had a man stood in the dock in that court because he had acted from a motive of purest charity, and could say that he had believed that he was carrying out his duty under the law, which was to look after his patient to the best of his ability: to guard her health and protect her from mental or nervous breakdown. Mr. Bourne was at the head of his profession, and altogether above the suggestion that he wanted advertisement. There was probably no one in court who would not at least give him praise for his courage; he had done that which he believed to be right.

For various reasons women would always demand abortion merely because they did not wish to bear children, and professional abortionists would always be forthcoming. Those, of course, were persons against whom Section 58 was directed. There was no wonder that the gravest misgivings had always beset and horrified medical men in dealing with the question of what cases were legitimate and proper for this operation. Their views ranged from persons who thought that it should never be performed at all to those who would do it merely because an unfortunate child had been raped. As the law stood, this was not a legitimate ground. Between those two extremes came the views of a great body of medical men and women who said that the operation could not be limited to cases in which the mother's life was in immediate danger, but that a reasonable view must be taken. The operation must be done, they said, by a person of skill, knowledge, and experience, and he must balance the ordinary risk of the operation against the danger to health in its widest sense if the operation were not performed.

Mr. Bourne had spent his life in that controversy, and had experience of cases in which the operation ought, in his view, to have been performed and had not been, with disastrous results. He had been prepared to make a martyr of himself for the purpose of having the law declared, his view being that if the general interests of the patient's health were endangered by having a child it was the surgeon's duty to operate. He had not courted publicity but had been willing, when the proper case came along, to have the matter dealt with. That this had happened in the particular case had been none of his doing. The wisdom of his attitude did not concern the Court. It was a thoroughly gallant thing to do, and no one would suggest that his motives had been anything but the highest from beginning to end. The whole thing was a work of the purest charity.

Mr. Bourne in the Witness-box

Mr. Aleck Bourne then went into the box and was examined by Mr. Roland Oliver.

He said that he had devoted much attention to the question of when the termination of pregnancy was justified. To him, in common with all gynaecologists, it was a constant problem. The views of his professional brethren varied enormously. In October, 1935, he had been about to terminate pregnancy in a child of 15, and his house-surgeon had declined to assist him and, on Mr. Bourne's invitation, had walked out of the operation theatre. That doctor had only recently been qualified, and had objected on religious

grounds. This refusal had led Mr. Bourne to think very hard, and he had determined to obtain the ruling of the Court on the next occasion—that was why they were there. He felt very deeply about the matter. If there were adequate medical reasons in the widest sense, on his interpretation of the law based on the everyday practice of reputable members of the profession, he considered it justifiable to terminate pregnancy, and he could not draw a line between danger to life and danger to health. If a doctor waited for danger to life, the woman was past assistance. He regarded abortion as a major operation, speaking in terms of other branches of surgery. He thought that 99 per cent. of his colleagues would be agreeable to have abortion performed on such patients as those on whom he had done it. He most emphatically included the preservation of mental health and the health of the nervous system among his indications. He did not think that such physical injuries as the girl had received would have caused a direct difficulty in her delivery. The circumstances of her conception were, however, such as to implant in her mind seeds of terror. Those who had clinical insight knew that terror and fear were the most serious deterrents to the unfolding of the whole process, whereby assistance might be needed which would in its turn do damage. The fact that she, a virgin, had been raped and treated in that way was a very strong element to him in making up his mind. Her age was another; the chief bones in the pelvis were not united. Her temperament and nervous make-up would be an important factor. He had naturally felt that some process of observation should be carried out, but frankly admitted a bias in the direction of relieving the child when he heard that she was connected with the crime.

Believing that the operation would be essentially necessary, he had first had to exclude at least three factors. He had felt practically certain from the first that she was no mental defective; he would not have operated if she had been, because she would not have suffered mental distress in the pregnancy, and the quality of the child was no concern of his. If she had belonged to the prostitute type he would probably, though not certainly, have decided against operating, for similar reasons. Thirdly, if she had been infected with venereal disease, an operation might have spread the infection up the birth canal and caused really serious illness. On the contrary, he had decided that she was emphatically suitable to have her uterus emptied. The ward sister had reported with surprise that the girl had not appeared to be worried at all, and was unusually cheerful considering the circumstances. This had at once made him suspicious that her cheerfulness was a façade of courage erected as a defence against her feelings. He had not made any kind of examination before taking the swab for the infection test and had been as careful as possible not to cause pain then. He had watched her demeanour when it had been first brought home to her by this procedure that she was really pregnant and the memory of the assault had come back to her. Instead of her bearing the trifling discomfort with fortitude, she had broken down and cried. That had confirmed his decision, and later in the day he had operated, after seeing the pathologist himself about the swab. The mischief he had feared for her if the pregnancy had proceeded included as its least important factor the possibility of physical injury, which could to some extent have been repaired. He had, however, learnt from the many young children of this kind he had seen that much more important was the mental and nervous injury, for it was extremely difficult to cure. It would have been a source of nervous, psychoneurotic, and other troubles, and there would perhaps have been secondary physical illnesses all her life.

In answer to cross-examination by the Attorney-General, Mr. Bourne said that he had never intended to operate on the girl before observing her and carefully considering whether she was a suitable case. He had admitted her with a bias in favour of operation, because in his experience a large number of similar cases required it. His record of abortion would stand any examination. He was ordinarily much stricter than many of his colleagues, but when there was a case with definite indications he would not hesitate in terminating pregnancy. Statistical experience showed that young children were subject to a much higher proportion of physical disorders and serious dangers than adult women.

The Attorney-General: "I suggest to you that there is a perfectly clear line of distinction between danger to life and danger to health."—"No; I cannot agree to that without qualifying. I cannot say just Yes or No. I can say that there is a large group whose health would be damaged but whose life almost certainly would not be sacrificed. There is another group at the other end whose life would be definitely in very great danger; and there is a large body of material between those two extremes in which it is not really possible to say how far life would be in danger, but we find, of course, that health is depressed to such an extent that their life is shortened, as in cardiac cases. Therefore you can say that life is in danger because death might occur within measurable distance of the time of their labour."

The operation, said Mr. Bourne, had certainly not been necessary to preserve her immediate life, but to say that her nervous system would probably be adversely affected would be a very mild term. He could not recall personally any instances of nervous or mental damage, but he had had many brought to his knowledge by reading and by conversation in the general way of collecting experience by contact with medical men. Such a point could be appreciated by one even with rudimentary knowledge of the elements of psychological medicine. Asked whether it was not usual for a gynaecologist in such a case to take a second opinion, he answered that he was usually appealed to himself, and had considered himself in this case as a second opinion.

Further Evidence for the Defence

The defence then called Dr. Jacob Arthur Gorsky, divisional police surgeon, who described how he had examined the girl on the night of the rape, and had found her very distressed, though giving a rational and coherent story. He said that his examination had revealed a physical condition consistent with the story of violence and rape which she had told to him then and subsequently at the trial of the guardsmen.

Dr. J. R. Rees testified to Mr. Bourne's professional reputation, and said that things of the mind were bound up with physical well-being. He was from time to time consulted professionally as to the advisability of terminating pregnancy, and had often considered carefully the grounds on which he would advise such treatment. The terror likely to be produced in this case, and the age of the child, would strongly predispose him towards advising it. He did not think that Mr. Bourne was putting it too high when he said that these two facts alone would give him a strong bias in favour of operation: they would have just the same effect on his own mind. In this case he would certainly have advised the termination of pregnancy. There would have been no question about it, because he was sure there would have been trouble in the future. Asked what the danger was, he replied that from his angle, which was the mental one, the results to be expected were rather comparable with shell-shock. This girl had been in fact wounded, one might say that she had been blown up, and he did not see why she should go on and be buried by having to continue pregnancy. She was almost certain to get some form of mental breakdown. He knew personally of two cases where intercourse had taken place under the age of consent; one was by rape and the other by incestuous relationship with the father. Both the patients had carried a child to term, and had been grown-up when he first saw them. Both had suffered from varying neurotic difficulties which had crippled them; neither had made a successful marriage, both were terrified at all matters connected with sex, and were anxious and unstable in every way. Had the pregnancies been terminated he thought that without question the mental state would have been better. His colleagues had related to him a number of similar cases, in some of which there had been definite mental breakdown—schizophrenia—as well as all sorts of abnormalities. He could not find any case in which the mother had remained mentally normal, though in two cases she had been physically normal.

The Attorney-General asked Dr. Rees if it were not impossible to assign specific portions of the mental disturbance

to the original rape and the subsequent child-bearing respectively. Dr. Rees replied that it was not entirely impossible. A recent research on child-assault had produced some evidence to show that the dramatic episode was not so important as the continued strain and the general emotional atmosphere. For some years he had been collecting data about cases of rape in which conception had not occurred. Symptoms certainly might appear in such cases, but he definitely thought that the danger of mental disturbance was reduced if pregnancy was terminated when it occurred. Preserving life to him meant preserving health; it was not possible to let a person drift into a mental breakdown in the future and say one was preserving life. The same symptoms might arise from other causes, but he thought that the resentment, the immense crushing sense of inferiority and the interference with instinctive life, in the degree in which they were found in these cases, constituted a syndrome which was in some sense unique.

Mr. William Gilliatt declared that Mr. Bourne, in the view of those who knew him, was a very competent obstetric surgeon, well qualified to form an opinion on the desirability of operation. After hearing Dr. Rees's views, he would himself undoubtedly have terminated pregnancy in this case. He described to the Court the additional risks run by young girls in childbirth, both from the toxaemias of pregnancy and from the incomplete ossification of the pelvis. The maternal mortality of the 15–20 age group was one per thousand higher than the average. He had collected from the reports of two maternity hospitals three cases of delivery between 13 and 14, four cases between 14 and 15, and 35 cases between 15 and 16; this girl would have been 15½ at the time of delivery. The percentage of abnormality in labour in these children was 45–50, and the figure was borne out by a German paper on the same subject. The principal difficulty which arose was ineffective action of the uterus and delay, so that interference was necessary and sepsis was likely to result. This did not pass off; if infection occurred in childbirth it remained for life.

Lord Horder, examined by Mr. Roland Oliver, said he was not infrequently consulted in cases where severe mental or nervous breakdown seemed likely to occur if pregnancy were not terminated, and that he considered the operation was justifiable in such cases. The facts of the child's age and the rape would have led him to the same conclusion as Mr. Bourne had come to, so far as he could judge without seeing the patient. It was not his opinion that the operation should only be performed to save life from immediate danger.

Concluding Addresses by Counsel

Mr. Oliver, in his final address to the jury, said that Mr. Bourne's attitude was that what he had done was lawful, right, and honest, and he had committed no offence. The statute of 1929, which dealt with the killing of a child at the point of birth, dealt with a case in which obviously immediate danger to life would excuse the destruction of the child. Applying it to the present case, one could speak properly of the preservation of the life of the mother in speaking of preservation of her health, for her life ultimately depended on her health. A wide and liberal view should be taken of the words "to preserve the life of the mother." The proposition that a doctor could only terminate pregnancy if the girl would otherwise die was a very extravagant one, and to say that he must not operate even if he were faced with the practical certainty that she would have a complete nervous and mental breakdown revolted one's sense of justice and every other sense. Mr. Bourne was not responsible for the views of Dr. Malleson. The prosecution had called no medical evidence and there was no evidence to throw doubt on the honesty and competence of the defendant, or upon the proposition that the mental health of the girl for the rest of her life was likely to be greatly prejudiced. "If you say," he concluded, "that the defendant had committed a felony, one will be left reflecting gloomily on the sense and reasonableness of one branch of English law."

The Attorney-General, in his concluding address for the Crown, said that the prime reason why abortion was a grave offence under the law, and perhaps always had been, was that the law was based on the sacredness of human life. The destruction of an unborn child was the destruction of a potential human life. He suggested that there was a fundamental difference between preserving life and preserving health. In any given set of circumstances a doctor or surgeon would be able to say, "I did this to preserve the life of my patient." He would then mean something different from when he said, "I did this to preserve the health of my patient." Mr. Bourne's letters showed that he took a very wide view of the cases in which the operation was proper to be performed. The evidence showed that the Crown had succeeded in proving that the operation had not been done for the purpose only of preserving life. Sir Donald Somervell did not minimize, he said, the possible mental effects of which Mr. Bourne and the other doctors spoke. The question was whether those mental effects, grave as they were, justified the termination of the pregnancy.

The Judge's Summing-up

Mr. Justice Macnaghten, in summing up the case to the jury, said that the offence was regarded by the law as a grave one. The punishment might be penal servitude for life, and the charge was only triable by a judge of the High Court. As a rule a case would only come before the Courts when something had gone wrong, because the crime was committed secretly, but, judging by the cases that came before the Courts, the crime was by no means uncommon. This was the second case at the present sessions in which a charge had been preferred for an offence against this section. He only mentioned the other case to show how different the present case was from those of the usual type. A woman without any medical skill or qualification had done what was alleged against Mr. Bourne: she had unlawfully used an instrument for the purpose of procuring the miscarriage of a pregnant girl. She had done it for money: £2 5s. had been her fee. She had come from a distance to a place in London to do it, and a pound had been paid her on making the appointment. She had used her instrument, and within an interval of time measured not by minutes but by seconds the victim of her malpractice had been dead on the floor. She had been paid the rest of her fee and had gone away. That was the class of case which usually came before the courts.

Mr. Bourne's case was very different. A man of the highest skill had openly, at one of our great hospitals, performed the operation—whether it was legal or illegal the jury would have to determine—as an act of charity, without fee or reward, unquestionably believing that he was doing the right thing and that he ought, in the performance of his duty as a medical man, devoted to the alleviation of human suffering, to do it. That was the case which the jury had to try.

The matter had never, so far as he knew, arisen before for a jury to determine in circumstances such as these. Even among learned counsel there had obviously been some doubt as to the proper expression of the law. Certainly one of the medical witnesses, Dr. Malleson, had shown uncertainty as to the law. It appeared from her letter that her views about the law were erroneous, and it was only fair to her to say that her last statement in the witness-box had been that she was a doctor and not a lawyer. On the previous day, in response to a request by Mr. Oliver, he had indicated to the jury his view of the law. The jury would take the law from him; if he erred and they found the accused guilty the Court of Criminal Appeal would put the matter right. He saw no reason to modify his earlier directions. The question the jury had to determine was, "Has the Crown proved to your satisfaction, beyond reasonable doubt, that the act which Mr. Bourne admittedly did was not done in good faith for the purpose only of preserving the life of the girl?" If the Crown had failed to satisfy them of that Mr. Bourne was entitled to a verdict of acquittal. On the

other hand, if they were satisfied beyond all real doubt that Mr. Bourne had not done the operation in good faith for the purpose only of preserving the life of the girl the verdict should be "Guilty."

"I fully agree," said his Lordship, "with the criticism of Mr. Oliver that the Infant Life Preservation Act, 1929, is dealing with the case where the child is killed while it is being delivered from the body of the mother. But the proviso in that Act—that no one is to be found Guilty unless it is proved that the act was not done in good faith for the purpose only of preserving the life of the mother—expressed what has in my view always been the law with regard to the procurement of abortion. Although that proviso was not expressed in the Act of 1861, the use of the word 'unlawful' implies the same thing: that no person ought to be convicted under section 58 of the Act of 1861 unless the jury are satisfied that the act was not done in good faith for the purpose only of preserving the life of the mother.

"This is a case of great importance to the public, and more especially to the medical profession. It has nothing to do with the ordinary cases of procuring abortion which I have had before me here. Those cases concern persons with no skill and no medical qualifications, with no pretence of being able to say that they were acting for the preservation of the mother's life. Cases of that sort are in no way affected by consideration of the question that is put before you. It has always been the law that the Crown have to prove the offence beyond reasonable doubt, to prove that the act was not done in good faith for the purpose only of preserving the life of the mother. In the ordinary case no question can arise: it is obvious that that defence could not be available to the professional abortionist.

"We have had a great deal of discussion about the difference between danger to life and danger to health. It may be that you are more fortunate than I am. I confess I have a great difficulty in understanding what the discussion really meant. Life depends on health, and it may be that health is so gravely impaired that death results. The Attorney-General suggested to Mr. Bourne that there was a clear line of distinction between danger to health and danger to life [his Lordship read the Attorney-General's question]; and he assumes that it is so. But is it? Of course there are things that are obviously a danger to health without being a danger to life. Rheumatism, I suppose, is not a danger to life, but it is certainly a danger to health. Cancer is plainly a danger to life, according to experience as it exists to-day; maybe a time will come when cancer will not be a danger to life. There are maladies that are a danger to life and maladies that are a danger to health, but is there a clear dividing line, a perfectly clear line of distinction? I should have thought not. I should have thought that impairment of health might reach a stage where it was a danger to life." [His Lordship read Mr. Bourne's answer, stating that there was a large body of patients between the two extremes, of whom it was not possible to say how far life would be endangered but whose health was depressed to such an extent that life was shortened, and death might occur within measurable distance of labour.] The learned judge continued: "If that is the view that commends itself to you: that you cannot say that there is this division into two separate classes with a dividing line between them, then it may be that you will agree with the view that Mr. Oliver put forward when he invited you, in construing those words 'for the purpose only of preserving the life of the mother,' to take a wide and liberal view of their meaning. I myself prefer the word 'reasonable' to the words 'wide and liberal.' I do not think it is contended that those words mean merely 'for the preservation of the life of the mother from instant death.' There are cases, as I expect you know from your own experience, where it is reasonably certain that a woman will not be able to deliver the child of which she is pregnant. In such a case, where the doctor anticipates, basing his opinion on the experience and knowledge of the profession, that the child cannot be delivered without the death of the mother, in those circumstances he is entitled—and indeed it is his duty—to perform this operation with a view to saving the life of the mother. If knowledge and experience teach that that is going to be the result, obviously the sooner the operation is performed the better. It is not necessary that the doctor should wait until the unfortunate woman is in peril of immediate death, and then at the last moment, if he is successful, snatch her from the jaws of death. He is not only entitled, but it is his duty, to perform the operation with a view to saving her life.

"You have heard of the wide variations of opinion which exist within the medical profession. Some there may be who hold the view that the fact that the woman desires an operation to be performed is sufficient justification for it. That is not the law. On the other hand, there are others who, for what are said to be religious reasons, object to the operation being performed at all in any circumstances. That is not the law. On the contrary, a person who holds such an opinion ought not to be a doctor—practising, anyhow, in that branch of medicine. Indeed, in a case where the life of a woman could be saved by performing the operation, if a doctor refused to perform it on the ground of some religious opinion and the woman died, he would be in grave peril if he were brought before this court on a charge of manslaughter by negligence. He would have no better defence than a person who, again for some religious reason, refuses to call in a doctor to attend to his child. Where, if a doctor had been called in, the life of the child would have been saved, and a person for a religious reason—a so-called religious reason—refuses to call in a doctor, he is also answerable to the criminal law for the death of his child. I mention those two extreme cases merely to show that the law, which is a reasonable law, lies between those two. It does not permit of the termination of pregnancy except for the purpose of preserving the life of the mother. But I think myself that those words ought to be construed in a reasonable sense: if the doctor is of opinion on reasonable grounds, on adequate knowledge, that the probable consequences of the continuance of pregnancy would indeed make the woman a physical wreck or a mental wreck, then he operates, in that honest belief 'for the purpose only of preserving the life of the mother.'

"These general considerations have to be applied to the particular facts of this case. Everything that has been said here tends to confirm the view that each case must depend upon its particular facts, and the circumstances of each case must vary infinitely. It is very undesirable that a young girl should be delivered of a child. Parliament has recently raised the age of marriage of a girl to 16: the opinion of Parliament is that it is very undesirable that a girl below 16 should marry and have a child. The medical evidence here establishes that view: that it is undesirable that a young girl should go through the stage of pregnancy and finally of labour. Then, regarding the effect of rape upon a child under the age of 15, Dr. Rees has said that from his experience and his knowledge the mental effect produced by pregnancy brought about by rape has a most prejudicial effect upon the mind of the girl. It is the merest common sense that if a girl is feeble-minded or belongs to the class that is described as the prostitute type, for her it is a different matter. But for an ordinary decent girl brought up in an ordinary decent way, by parents without any knowledge—as Dr. Malleson observed—of where they could look for a professional abortionist, you may think that Dr. Rees was not understating the probable effects on her life of having to bear this child.

"All this, of course, depends upon your opinion. As far as danger to life is concerned, of course you cannot be certain that there is danger to life unless you wait until a person is dead. Nobody asserts that the operation only becomes legal when the patient is dead. It is all a matter of opinion. The example of acute appendicitis was mentioned. It is a matter of common knowledge that the surgeon prefers to operate when the appendicitis is not active. Take this case. A child is suffering from symptoms which a doctor diagnoses as appendicitis. The symptoms subside, and the doctor says: 'The symptoms have subsided and she will probably get quite well again, but at the same time it may be merely a temporary lull and to-morrow the condition may be much worse. If you let me prepare the patient and operate to-day

I can guarantee the life of your child, and the operation will be performed in perfect safety.' If, as probably happens when there is appendicitis, the child gets worse, the appendicitis becomes acute and the doctor has to operate, as he may have to, in such circumstances that he cannot guarantee the life of the child, the child may die. Suppose that choice is put to the parents: 'Will you have the operation to-day, or will you wait until to-morrow to see whether the disease becomes acute? '—what answer is there to that question but to say, ' Do it now; do it while you are still safe; do not wait to see whether she is near death.' The operation may be performed and it may be found that the appendix was quite all right; but is the surgeon blamed for performing the operation? He used his best judgment. The surgeon can only base his opinion on knowledge and experience, and if he in good faith thinks that it is necessary for preserving the life of the child in the real sense of the words, not only is he entitled to perform the operation but it is his duty to perform it.

"In regard to any other operation on the human body obviously no difficulty arises. The only difficulty that arises in the case of abortion is that the law of this land has always held human life to be sacred, and the protection that the law gives to human life extends to the unborn child in the womb. The unborn child must not be destroyed except for the purpose of preserving the yet more precious life of the mother."

In conclusion, the judge repeated the question on which the jury had to return their verdict. He added that so far as the members of the medical profession themselves were concerned they alone were the persons who could properly perform such an operation. It was to be hoped and expected that none of them would ever lend himself to the malpractices of the professional abortionist. No doubt they would act only in consultation with some other member of the profession of high standing, so as to confirm the view that the circumstances were such that an operation had to be performed and was legal.

The jury were absent for forty minutes and returned a verdict of "Not Guilty."

Mr. Aleck Bourne's defence was conducted by Messrs. Le Brasseur and Oakley, solicitors to the London and Counties Medical Protection Society.

AN ACTION WITHDRAWN

At Leeds Assizes on July 12 an action brought by a patient against a hospital house-surgeon was withdrawn. The plaintiff was John Neville Newmarch, a Hull rivet-heater, and he sought to recover damages for alleged negligence from Dr. Martin Fleischer, house-surgeon at Hull Royal Infirmary, who performed an operation on him in October, 1936. Mr. H. Hylton-Foster, counsel for Newmarch, said: "On behalf of the plaintiff I unreservedly and in the most unqualified manner withdraw every allegation of negligence made against the defendant in this case, and I ask for an order for the payment out of court of the sum paid into court to the defendant's solicitor." Mr. Justice Goddard made an order that all proceedings should be stayed on terms endorsed on counsel's briefs, and added that there would be a judge's order if necessary.

Universities and Colleges

UNIVERSITY OF OXFORD

In Convocation on July 16, the Vice-Chancellor, Mr. A. D. Lindsay, presiding, the honorary degree of D.Sc. was conferred on Dr. Harvey Cushing, C.B., Emeritus Professor of Surgery at Harvard University.

The Public Orator, Mr. Cyril Bailey, presented Professor Cushing as an illustrious surgeon who had performed more than 2,000 successful operations on the brain. He was descended from a long line of doctors and obtained his medical degree at Yale. After studying in Europe he returned home, and maintained in his writings and proved by his actions the value of the very difficult operation on the brain which he himself once called "The North-West Passage of Surgery." The fine services he had rendered during the great war were well known to all. For nearly thirty years he was Professor, first at Yale University and then at Harvard, and many of his pupils were to-day famous. An expert with the pen as well as with the scalpel, he had written many technical treatises on the nerves, the structure of the brain, and the pituitary gland, and for the layman the great life of Sir William Osler.

The following medical degrees were conferred in Congregation presided over by the Vice-Chancellor:

D.M.—A. D. C. Bell; R. R. Bomford.

B.M.—T. R. Savage, J. M. Teasdale, W. E. Young, J. B. Atkins, R. H. Mole, E. B. G. Reeve, M. A. Slee, A. Shannon, R. A. Shawyer, J. C. Hewetson, O. I. Green, C. W. M. Whitty, J. S. Astbury, W. M. Gibson, D. R. Cargill, C. Exell, C. R. B. Welford, J. G. Jamieson, T. E. Ooi, Celia K. Westropp.

UNIVERSITY OF LONDON

Brown Animal Sanatory Institution Committee

The Senate has received the report of the Brown Institution Committee for 1937, which records that the superintendent has continued his research on viruses, and Dr. Nathan Raw has continued his research in human and bovine tuberculosis. Five lectures on "A Comparative Study of Filter-Passing Bacteria and Viruses" were delivered as required under the will of the late Mr. Brown. At the hospital during the year 1,298 cases were treated as out-patients, thirty-two as in-patients, and the number of operations performed was 311.

Graham Legacy Committee

Dr. A. M. H. Gray has been elected chairman of the Graham Legacy Committee for the year 1937–8. The Senate has received the annual report of the Committee for the year ending August, 1938, which states that the general purpose for which the Graham Fund was founded was to aid research in the school of advanced medical studies connected with University College Hospital. The Graham Scholar is Mr. C. H. Gray, and Drs. C. Bolton, G. R. Cameron, M. Maizels, and F. H. Teale have received grants in aid of research from the Graham Fund. Professor C. R. Harington, F.R.S., was reappointed Director of Research under the Charles Graham Medical Research Scheme for a period of one year from October 1.

Regulations relating to exemption from the internal intermediate examinations in arts, science, engineering, economics, and commerce, and from the first examination for medical degrees, through the higher school examination of other universities (*Red Book*, 1937–8, pp. 89, 345, 489, 556, 575, 269), have been approved.

In and after 1939 the examination for the academic postgraduate diploma in bacteriology (*Red Book*, 1937–8, p. 610) will begin on the Thursday following the third Monday in June instead of the first Tuesday in July.

Mr. Philip H. Mitchiner has been appointed a Governor of the West London Hospital Medical School for 1938–9.

The syllabuses in inorganic chemistry, physics, and general biology for the first examination for medical degrees for internal and external students (*Red Book*, 1937–8, pp. 264–7; *Blue Book*, September, 1937, pp. 809–12) have been amended, and copies can be obtained from the Academic and External Registrars.

Geoffrey E. Duveen Travelling Studentship

Applications are invited for the Geoffrey E. Duveen Travelling Studentship, of the value of £450, for research in any aspect of oto-rhino-laryngology. The studentship is normally tenable in the first instance for one year, part of which shall be spent in study abroad, in accordance with a scheme to be approved by the Studentship Board, but it may be extended for six months or for one or two years, and during the extended period the student may be allowed to undertake research at the Royal Ear Hospital or some other laboratory approved for the purpose. Full particulars can be obtained from the Academic Registrar, University of London, W.C.1, and prescribed forms of application must reach him not later than December 31.

William Julius Mickle Fellowship

Applications for the William Julius Mickle Fellowship are invited and must be sent in by October 1. The Fellowship is of the value of at least £200, and is awarded annually by the Senate to the man or woman who, being resident in London and a graduate of the University, has in its opinion done most to advance medical art or science within the preceding five years, and has therein shown conspicuous merit. Further particulars can be obtained on application to the Academic Registrar.

No. 27.

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 9, 1938.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for : (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns (124 in 1937) in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns (9 in 1937) in Northern Ireland.

A dash — denotes no cases ; a blank space denotes disease not notifiable or no return available.

Disease	1938					1937 (Corresponding Week)					1929-37 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	18	3	8		1	28	3	6		1		
Deaths		1	2				—	1				
Diphtheria	1,001	127	151	49	21	927	127	137	39	19	892	171
Deaths	22	2	4	2	—	28	3	4	1	—		
Dysentery	51	23	40		—	18	3	9		—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	4	—	4	1	—	8	—	1		—		
Deaths		1					1					
Enteric (typhoid and paratyphoid) fever	13	2	6	5	4	32	1	6	7	3	50	—
Deaths	—	—	—	—	—	—	—	—	—	—		
Erysipelas		2	59	2	5		2	57	3	5		
Deaths												
Infective enteritis or diarrhoea under 2 years	64	19	10	10	2	44	14	11	6	2		
Deaths												
Measles			91		7			87		2		
Deaths	7	3	1	—	1	15	—	—	2	—		
Ophthalmia neonatorum	113	9	26		—	105	8	30		—		
Deaths												
Pneumonia, influenzal†	500	42	5	1	16	532	26	3	4	2	546	42
Deaths (from influenza)	11	2	2	—	—	7	1	3	1	1		
Pneumonia, primary			139	8				133	9			
Deaths		15		8	6		13		6	4		
Polio-encephalitis, acute	1	—				1	—					
Deaths		—					—					
Poliomyelitis, acute	6	—	4		—	9	2	2		1		
Deaths		—					1*					
Puerperal fever	5*	5	17	3	—	35	3	17	3	—		
Deaths		—					—					
Puerperal pyrexia	164	17	23		—	141	16	20		—		
Deaths												
Relapsing fever	—	—			—	—	—			—		
Deaths												
Scarlet fever	1,751	157	295	73	71	1,687	191	343	80	39	1,658	244
Deaths	2	—	2	—	—	3	2	1	—	—		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—	—	—		—	—		
Typhus fever	—	—		—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough			29		8			49		5		
Deaths	3	1	5	2	1	14	3	5	2	—		
Deaths (0-1 year)	294	63	64	27	19	283	54	73	23	16		
Infant mortality rate (per 1,000 live births)	49	52				48	45					
Deaths (excluding stillbirths)	3,851	701	595	175	136	3,796	748	584	157	145		
Annual death rate (per 1,000 persons living)	9.5	8.9	12.1	11.8	12.1	9.4	9.4	11.9	10.7	13.9		
Live births	6,761	1,234	923	338	252	6,800	1,225	919	415	266		
Annual rate per 1,000 persons living	16.6	15.7	18.8	22.9	22.3	16.8	15.4	18.8	28.3	25.5		
Stillbirths	326	51				269	47					
Rate per 1,000 total births (including stillborn)	46	39				38	37					

* After October 1, 1937, puerperal fever was made notifiable only in the administrative county of London.

† Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

EPIDEMIOLOGICAL NOTES*

Enteric Fever

During the week under review 13 cases of enteric fever were notified in England and Wales, as compared with 26 in the previous week. Of these 2 (5) were in London—1 each in Camberwell and Paddington. In Scotland 4 cases of typhoid fever were recorded—1 each in Lanark County, Glasgow, Edinburgh, and Roxburgh County—and 2 cases of paratyphoid fever, both in Ross and Cromarty County. There were 5 cases of enteric fever reported in Eire during the week under review, the same number as last week, and 4 (0) cases in Northern Ireland.

Diphtheria and Scarlet Fever

Notifications of diphtheria in England and Wales during the week under review rose from 943 to 1,001, but in London they fell from 140 to 127. There was a marked decrease in the notifications for Scotland—151 as against 176—but in Eire there was an increase of 5 over 44 recorded last week, while in Northern Ireland the figure remained at 21. Deaths from diphtheria in the 126 Great Towns of England and Wales remained at 22, and in London at 2. Of the 22 deaths recorded in the 126 Great Towns 3 each occurred in Leeds (0) and St. Helens (0). There were 4 deaths from diphtheria in the 16 principal towns of Scotland during the week under review—1 each in Glasgow (3), Edinburgh (0) Dundee (1), and Clydebank (0). There was an increase in the number of notifications of scarlet fever in England and Wales during the week—1,751 as against 1,641—and in London—157 as against 152 in the previous week. In England and Wales the figures were in excess of the median value for the last nine years, but in London they were appreciably less. There were 2 deaths from scarlet fever in the 126 Great Towns of England and Wales during the week under review, the same as last week; no deaths from scarlet fever were recorded for London. Notifications for Scotland fell from 361 to 295, with 2 deaths, while in Eire and Northern Ireland they fell from 88 to 73 and from 78 to 71 respectively.

Primary and Influenzal Pneumonia

The seasonal fall in the notifications of primary and influenzal pneumonia continues, the figures for England and Wales dropping during the week from 622 to 500; this figure is well below the median value for the last nine years. In London the fall in the number of notifications is very slight, the number notified being the same as the median value.

Measles and Whooping-cough

During the last few weeks the deaths from measles in the 126 Great Towns of England and Wales have fallen from about 12 to 8; of the 7 deaths registered during the week under review 3 were in London. The number of cases reported in the L.C.C. elementary schools has fallen rapidly, the figures for the last four weeks being 680, 422, 348, and 250 (week under review), while the average daily admissions to the L.C.C. fever hospitals fell by one-third compared with the previous week. Notifications dropped in three of the metropolitan boroughs in which measles is notifiable, remained the same in two, and rose in six—Battersea 23 (18), Finsbury 10 (8), Hampstead 10 (6), Lambeth 31 (17), St. Pancras 18 (15), Stepney 6 (5). In Scotland measles is also on the wane, 91 cases being notified, compared with 113 in the previous week; Dunfermline, Kirkcaldy, and Falkirk were the chief towns involved.

Whooping-cough in Scotland has replaced measles as the principal killing infectious disease; compared with 1 death (in Glasgow) from measles there were 5 deaths from whooping-cough—2 in Glasgow and 1 each in Greenock, Hamilton, and Paisley. In Eire 2 deaths from whooping-cough were recorded, both in Dublin, and in Northern Ireland 1 death was reported, in Lurgan.

Notice was given in the *London Gazette* of Friday, July 15, of regulations making measles and whooping-cough compulsorily notifiable in the County of London. These regulations, which are made under the Public Health Act, 1936, come into effect on October 1. Notification is restricted to the first case occurring in the same house or institution within a period of two months; in this way the occurrence of these diseases is brought to the notice of borough medical officers of health, who will be able to supervise contacts and have the earliest warning of the development of further cases. Current practice in London and the expected effect of general compulsory notification were dealt with in the *Journal* of April 9 (p. 807). A possible development, the scope of which cannot be determined at present, is that active immunization of contacts by means of specific vaccines may be carried out by the co-operation of medical practitioners with borough medical officers of health.

Cholera

The epidemic of cholera in Hong Kong continues, although the number of cases reported for the week ended July 9—225—was 76 less than in the previous week. In Hong Kong in the same week there were 43 cases with 32 deaths. Cholera first made its appearance in Hankow during the week ended June 25, and, although no details are available as to its incidence since, the outbreak is likely to spread on account of the large number of refugees in that city and of the military operations proceeding on the Yangtse River. In French Indo-China and in British India generally a downward trend of the disease has been noted in recent weeks, except in the Central Provinces and in Berar, where a fresh wave occurred during the week ended July 9 after a period of decline lasting three weeks.

Typhus

The incidence of typhus in Morocco has been falling in recent weeks; 66 cases with 10 deaths were reported in the week ended July 2, compared with 71 in the previous week. In Tunisia 55 cases were notified, compared with 76 in the previous week; and in Egypt there were 42 cases in the provinces, 1 in Cairo, and 1 case with 1 death in Alexandria.

* Except where otherwise mentioned figures in parentheses refer to the week preceding the one under review.

Medical News

Lieutenant-Colonel W. L. Harnett, C.I.E., M.D., F.R.C.S., I.M.S. (ret.), former professor of surgery, Medical College of Calcutta, and recently reader in surgery at the British Postgraduate Medical School, has been appointed medical secretary to the Clinical Cancer Research Committee of the British Empire Cancer Campaign. The scheme of clinical cancer research, which has already started, will embrace approximately 17,000 fresh cases of cancer annually occurring in the teaching hospitals and the specialized hospitals of the London area and the hospitals of the London County Council and the Middlesex County Council.

We are asked to announce for the information of general practitioners that the out-patient department of the Chelsea Hospital for Women is closed now for new patients until the first week in September.

Mr. A. N. Dixon has been appointed to the position until recently held by Mr. P. N. Adamthwaite as agent (manager) of the Medical Insurance Agency. Mr. Dixon will take up duty on September 5.

The American Association for the Study of Goiter will hold its annual meeting for the year of 1938 in conjunction with the third International Goiter Conference in Washington, D.C., on September 12, 13, and 14. The programme for the first day will consist of the presentation of papers concerning endemic goitre; the second day will be devoted to a study of the thyroid in relation to endocrinology and metabolism; and the third day will be given up to hyperthyroidism. These subjects will be discussed by workers from several different countries.

The fifth European Congress of Mental Hygiene, organized by the committee of mental hygiene of the Association of German Neurologists and Psychiatrists, will be held at Munich from August 22 to 25. Further information can be obtained from 80, Rue de Levourne, Brussels.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors overseas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh;* telephone 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin;* telephone 62550 Dublin).

QUERIES AND ANSWERS

Case for Diagnosis

Dr. T. STACEY WILSON (Birmingham) writes in reply to "Fag" (*Journal*, July 9, p. 105): With regard to the patient mentioned by "Fag" the history of the case makes it quite probable that the "colic" is a referred pain due to fibrositic thickening, irritating an intercostal nerve, which is in relationship to the skin area in which the pain is felt. If this be so, destruction of the fibrositic tissue by forcible massage will free the patient from pain. If forcible massage over one of the ribs induces pain next day over the area where the pain is usually felt, destruction of the fibrositic tissue is certain to cure the condition. This subject is dealt with in an article of mine in the *Journal* of February 15, 1936 (p. 298).

Income Tax

Army Pay While Abroad

"Captain, R.A.M.C." was living abroad up to June 17, when he returned to this country. Between April 6 and June 17 he remitted £100 to the United Kingdom; his wife was here but he maintained no residence here. Is he liable to United Kingdom income tax, as well as Indian income tax, on the £100?

*** Yes. He is a British resident for the financial year commencing April 6, 1938, and is liable on pay received in or remitted to this country. He is, however, entitled to "Dominion Income Tax Relief" in respect of the tax paid in India on income assessable also in the United Kingdom. The working of that relief is somewhat complicated, but it will probably recoup him for at least one-half of the relative Indian tax.

LETTERS, NOTES, ETC.

Lunatics as Pets

This is the bizarre title of an article by Dr. Claude Lillingston in the July number of *Blackwood's Magazine*. Behind the story of a plucky old lady who preferred a lunatic to the conventional pet—asthmatic dog, mangy cat, or twittery canary—is a plea for home rather than hospital treatment for certain cases of mental disorder. The heroine of the story, taken from life, was a lone widow who had just settled into a cotton-wool-with-hot-bottle nest of her own when she received an S.O.S. from an old friend whose relations had deposited him in a mental institution. She proceeded forthwith to dig him out of it and install him as the guest of honour in her own home. His joy was boundless. And might he have a razor? Razors had, of course, been taboo in the asylum. Without a moment's hesitation his hostess supplied him, not with one, but with all the seven razors her husband had owned—one for every day of the week. To the warning that her guest might cut his throat she retorted with charming elliptical logic that she had never heard of any lunatic being so deft that he could slit his throat with seven razors. The guest was allowed to come and go as he pleased, and the neighbours were free to make their own comments when her guest was shepherded home by some policeman making good the lunatic's temporary loss of memory. This story of what may have been a case of early senile dementia is a timely reminder of the inability of some people, whether they are sane or insane, to appreciate institutional life however perfectly organized—people to whose angular individualism the very perfection of a well-organized community may be anathema. After confessing that he does not know how this story ended because he had not kept in touch with the lady and her pet, the author asks if the keeping of lunatics as pets may not be a far more common practice than most of us realize; he even goes so far as to suggest that the world is full of such combinations, and that in some cases there may be doubts as to who is the pet and who is the keeper thereof.

Bed-bug in the Human Ear

Dr. C. E. ELLIOTT (London, S.W.7) writes: I have read with interest the note by my colleague, Dr. N. Vere-Hodge (*Journal*, June 25, p. 1406), regarding a bed-bug which he dislodged from the ear of a patient. Let me assure him that his experience is not unique. I well remember two of these creatures, reminiscent of the man-eaters of Tsavo, who conducted nightly forages from the same diurnal retreat—one in each ear. It was some weeks before we could locate them. Bed-bugs sometimes choose curious hiding places. In his recent autobiography Noel Coward records a nest of these creatures, which was finally traced to an embroidered picture.

Qualifications for Caretaking

"C. B. H." writes: Practitioners of physical medicine have frequently been accused of various forms of ju-ju, but the following extract from a reply to an advertisement for a man and wife to act as doorman and "looker-after" of my instruments may perhaps only be personal to myself—and not significant of an inside knowledge of the subject: "I was also employed as post-mortem attendant, during which time I have prepared as many as five bodies in a day (removing all viscera, etc.) for the demonstrating pathologist, so I am sure that you would find me suitable for the position of caretaker, etc., and handyman."

Holidays and the Milk Supply

Dr. C. O. Hawthorne, chairman of council, and Miss Olga Nethersole, founder and organizer, of the People's League of Health, have sent the following letter to the Press: May we, as in the past, give a word of advice to holiday-makers? Holidays means change in surroundings, habits, occupation, and food. At home the food supply is under the control of the housewife, who has learned by experience to know where reliable foods can be obtained. The holiday changes this position, and the family supplies are under a new supervision. Quite likely this supervision is, in general, satisfactory. None the less, it is well to be on the safe side, for a holiday which leads to illness is an unhappy experience. The milk supply in this respect is particularly important. At a well-known holiday resort, some eighteen months ago, there was an outbreak of typhoid fever which caused fifty-one deaths, including those of a number of summer visitors. All the primary cases were traced to an infected milk supply, and of great significance is the official announcement that when the milk was pasteurized the epidemic ceased. The lesson is obvious. To avoid risk drink only pasteurized milk, or, if this cannot be obtained, protect yourself and your family by heating the milk to boiling-point. Everyone recognizes the food value of milk, especially for children. Yet raw milk means some degree of risk. Pasteurization or boiling, on the other hand, means safe milk and milk of full food value. There is an old adage, "Prevention is better than cure." Here is a chance to apply it.